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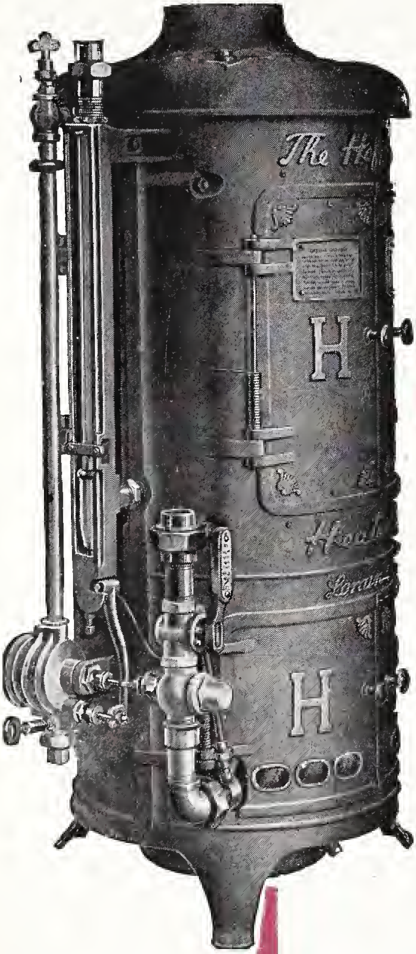

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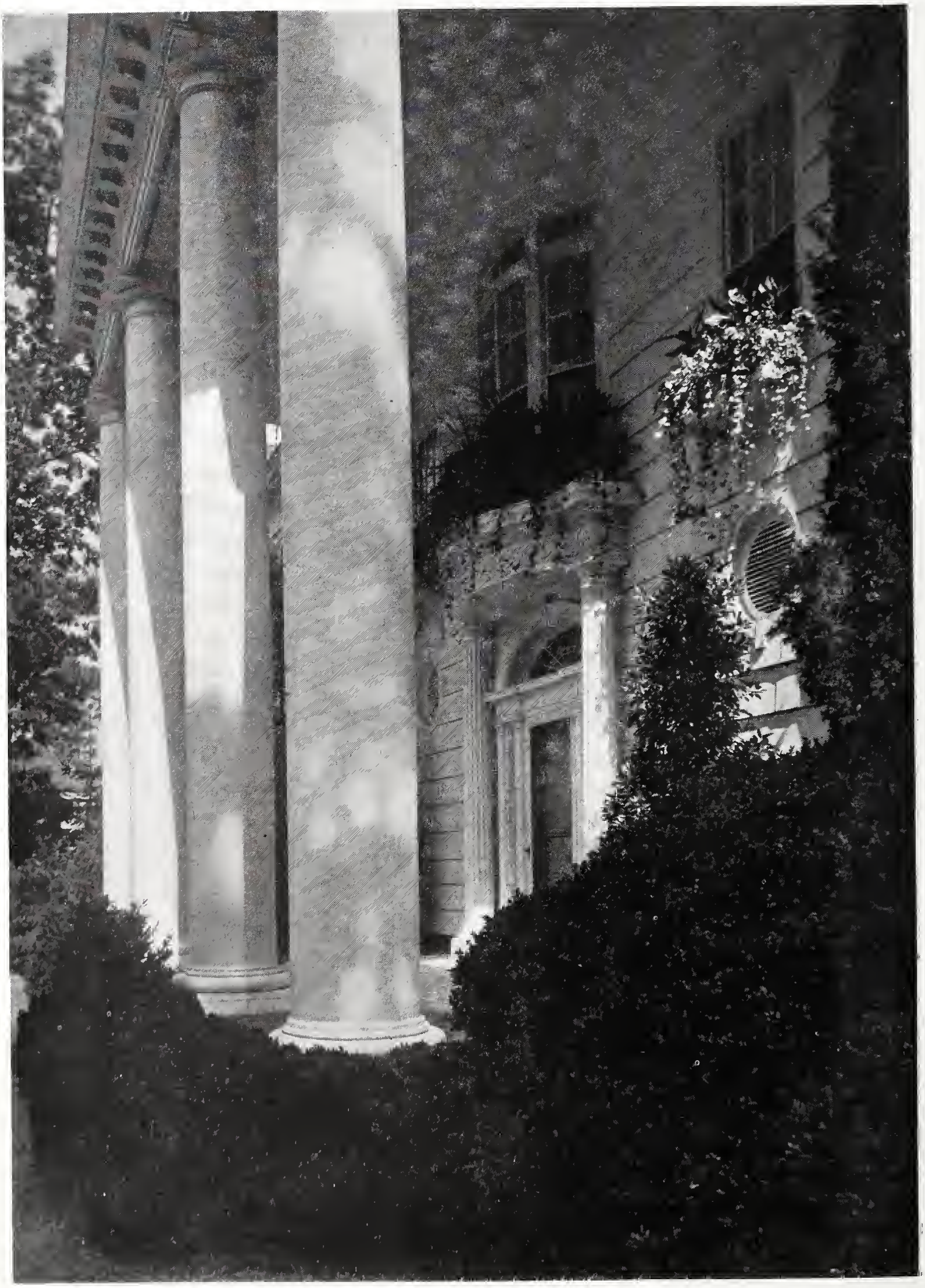

MAIN DOORWAY, UNDER ENTRANCE PORTICO—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.

THE
ARCHITECTVRAL
RECORD

VOLVME XLIII NVMBER I

JANVARY, 1918

The COUNTRY HOUSE of J.W. HARRIMAN, Esq. BROOKVILLE, L.I.

ALFRED C. BOSSOM, ARCHITECT

By John Taylor Boyd, Jr.

THE residence of Mr. J. W. Harriman, at Brookville, Long Island, designed by Mr. Alfred C. Bossom, of New York, is an ample, roomy, homelike place, of open terraces overlooking meadows, and with long, low proportions well fitted to the ground somewhat in the fashion of the old Georgian houses which are grouped about the cathedral close in Salisbury, England. The quiet privacy and cheerful seclusion of it leave no trace of the conventional appearance that injures so many of the larger American country houses.

The Harriman residence has a charming outlook from the garden front southward over rolling Long Island meadowlands, broken here and there with trees, where the sheep graze as in many a similar English landscape. Besides the low proportions referred to, three terraces assist to harmonize the house with the terrain—one, at nearly the first floor level, extending out some seventy feet, mostly open except for a few trees; and two others below, which are destined for flower gardens.

As might be expected of a rather long house, the entrance is in the middle, through a fine portico of four columns and a pediment, in the stately, hospitable old manner of American houses over a century ago. The drive curves up to the ridge on which the house stands, rising some sixty feet or more through an old natural wood, now fringed with rhododendrons, one of the very few woods not man-made on Long Island.

This open yet quiet situation was in keeping with the owner's wish for a com-

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fortable and livable informal outdoor place having plenty of sunlit porches—a house that should appear permanent, substantial, not merely a summer home. Such an informal yet substantial appearance Mr. Bossom has skillfully obtained. The dominant features of porches and entrance portico, which might easily have become austere or too imposing, have been detailed in a sensitively appropriate domestic scale; nor, in the garden front, do the many porches and sleeping porches appear to be overdone. On a brick house they might have destroyed the unity, but here the even color of the wood insures a simple effect.

The plan of the house also is interesting, having been most carefully worked out. An old building on the site was made use of in the central portion, but its form has disappeared in the new residence. The porches along the garden front that were built by Mr. Bossom occupy positions formerly taken up with bay windows, and the terrace was lengthened out at each end. For so long a house—the whole structure, including the laundry and servants' court, is over two hundred feet in length—it has no waste space, and, owing to the central entrance, there is no undue length of narrow hallways.

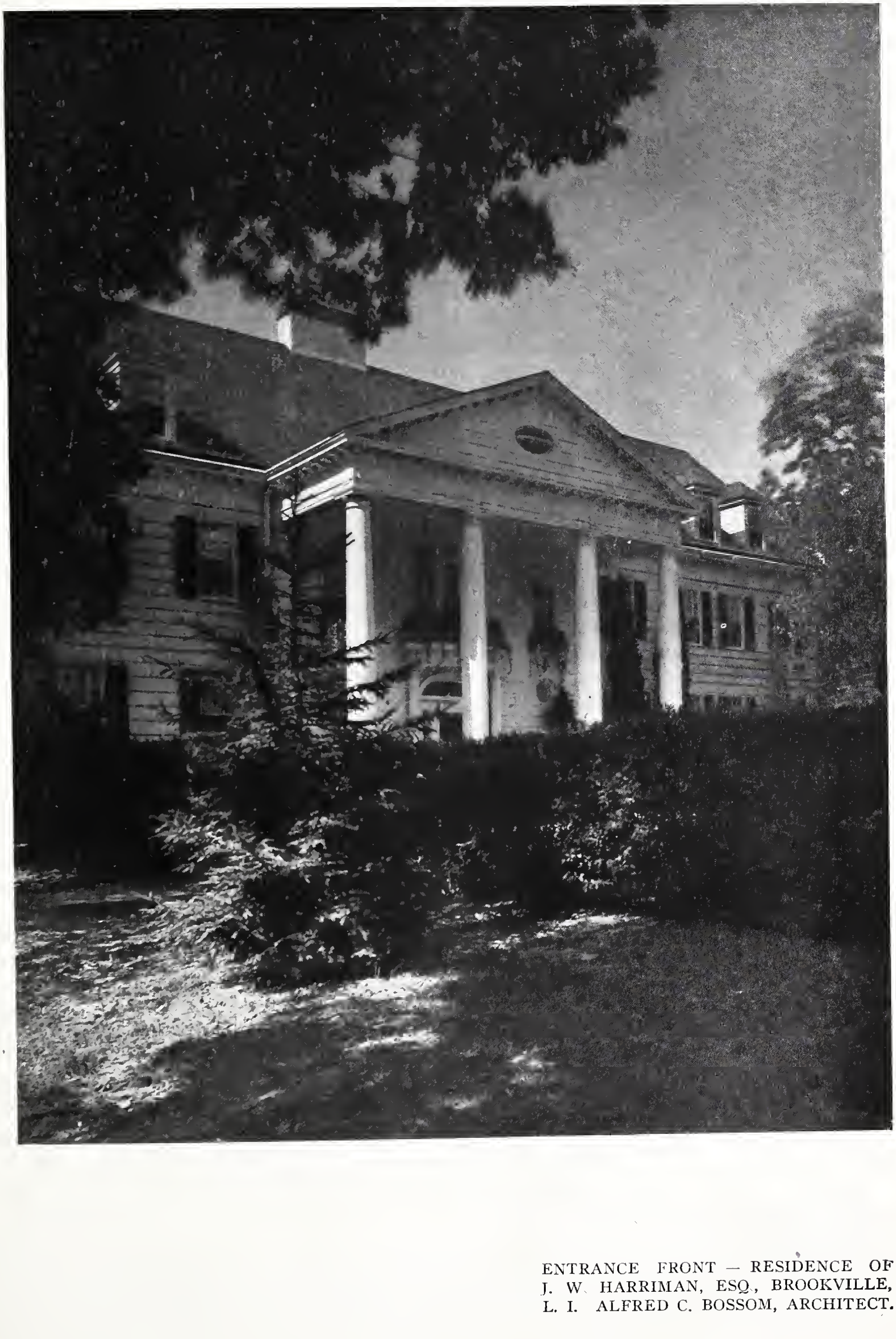
Inside, the double stairway behind the arches, meeting in a landing over the front door, will at once draw the attention. Here again a feature which might easily have been too monumental for a private residence has been treated in an agreeable, homelike scale; and the interesting device of half concealing the stairs behind the arches heightens the effect of domesticity. Coat closets and a ladies' room occur near the entrance, as in most large houses. An unusual feature is the three guest rooms for men on the ground floor, at the northwest corner of the house. Correctly placed, the important rooms are along the south, on the garden, with the double-decked porches and connecting pergola between acting as alcoves to them. Another convenient element is the wash room near this part, opening off the library.

On the first floor, one of the porches is a breakfast room, the other a lounging room. On the second floor, both are open sleeping porches, each of which is connected with one of the two principal bedrooms. Two other sleeping porches are really loggias inside the line of the house.

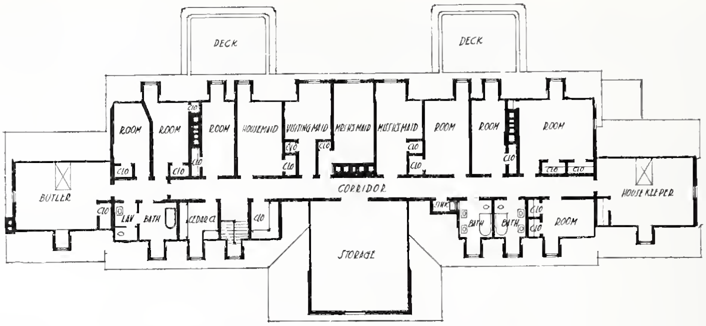
It is rarely that one sees a house with such a complete, even sumptuous, service wing. I have remarked elsewhere the elaborate lengths that owners are forced to go in order to keep servants in the country. One might believe, after seeing the arrangements for them in the Harriman residence, that the only step left to take would be to allot the main part of the house to the servants. In the Harriman house they have individual rooms, with very many baths, besides the dining room porches set apart for their use, and a large enclosed court at the end of the service wing belongs to them exclusively.

The second floor of the house is given over to bedrooms with their appurtenances—of a somewhat modest size for so large a house. The description of the plan is finished by noting that there is no second floor to the service wing; instead, the entire third floor of the main house is given over to the servants' rooms and baths.

How this excellent plan works out is evident in the photographs. They show the more formal and at the same time simpler north entrance front, with its portico, and the south garden front, also symmetrical but more diversified and more informal. Of the two, the long, unbroken entrance façade is the more reposeful in its proportions and its details. The four plain columns of the entrance are perfect examples of the best early American style, and, when considered in conjunction with the design of the entrance doorway itself and of the windows on each side of it, form a most attractive bit of architectural composition, displaying an unusually sensitive understanding of the interest and charm that may properly be expressed in a wall behind the porch of a residence. It is technically a different case from the portico of a public building, where the entrance is apt to be simpler,



ENTRANCE FRONT — RESIDENCE OF
J. W. HARRIMAN, ESQ., BROOKVILLE,
L. I. ALFRED C. BOSSOM, ARCHITECT.



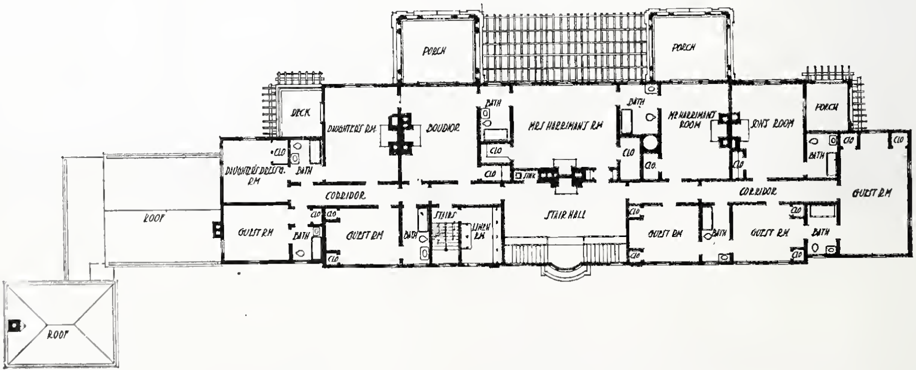
ATTIC FLOOR PLAN—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I.
Alfred C. Bossom, Architect.

allowing the decorative emphasis to be put on the columns. In this house the impression of the doorway is such that one may feel instinctively that one enters a home and not a library or a town hall.

In this north wall the broad horizontal banding of the shingle courses shows particularly well. It affords an ideal scale for a wooden wall—either that or the extremely narrow clapboarding of certain parts of New England, which is in courses of not more than three and one-half inches, and, in the best examples, only two and three-quarter inches.

The garden front presents a most cheerful, vigorous effect as a whole, making the house a very interesting feature on the site. The fine contrast between the simple, low service wing and the lattice-spotted brick work of the servants' court adds immensely to the scheme. If some of the details of the main house on the south front are not entirely reposeful, this is clearly due to the old part of the house. There is a rather marked diversity of window openings, and some of the architectural lines meet in an unusual manner. But it should be said that double-tiered sleeping porches are most difficult things to design and that the architect has boldly chosen to make them strongly modeled with a variety of projections and gables and pediments and awnings, thus providing a fine play of light and shade and shadow, all of which seem to harmonize the front. It accords admirably with the planting. Such strong modeling is rather more of a sculptor's conception than an architect's. It leans toward the school of architecture that Michael Angelo inspired in Renaissance architecture—in his earlier work, that is, before he developed into the extremes of his Baroque mannerisms.

The service wing is an excellent piece of American design. Attention is called to the treatment of the brick wall, here,



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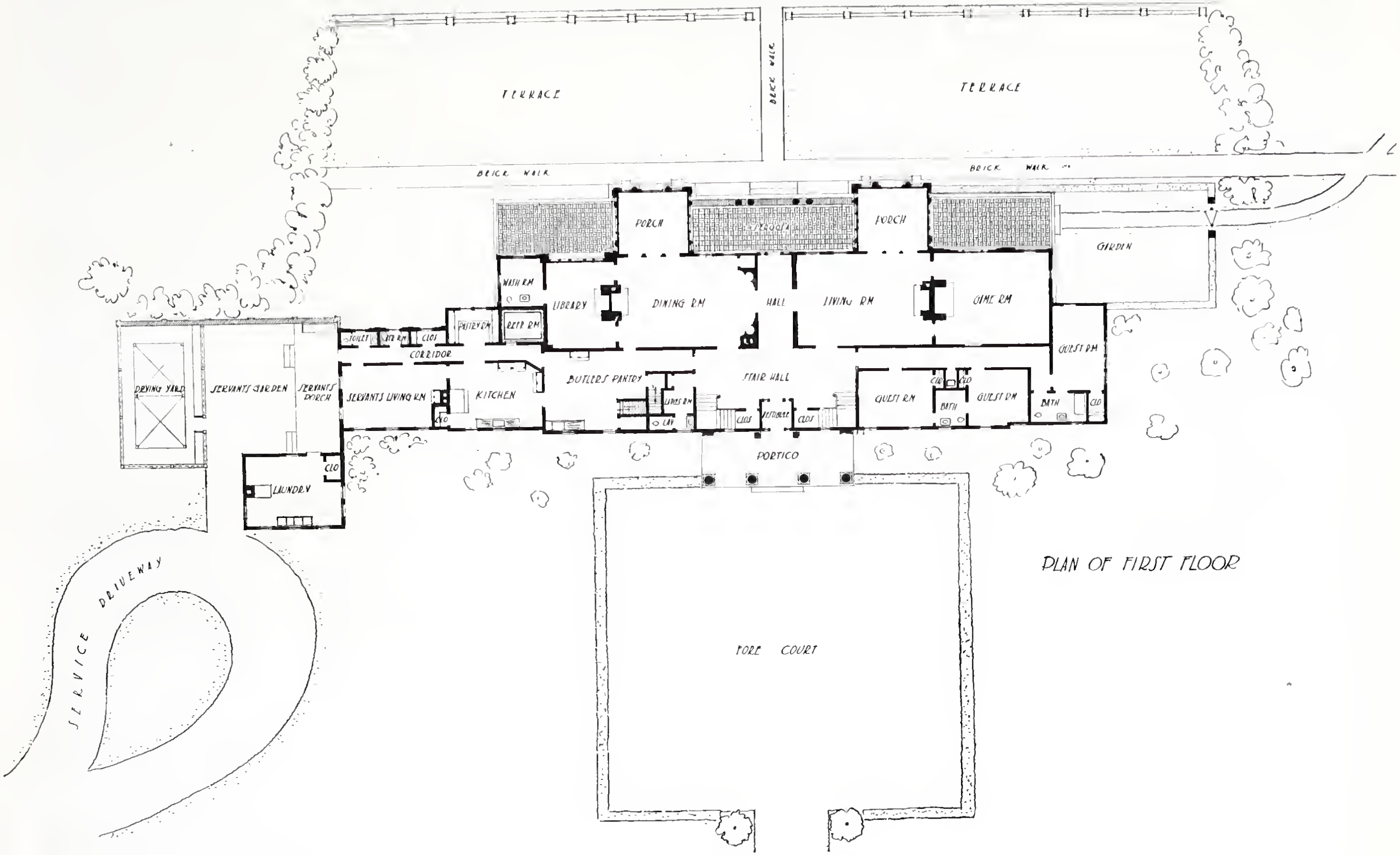
Alfred C. Bossom, Architect.



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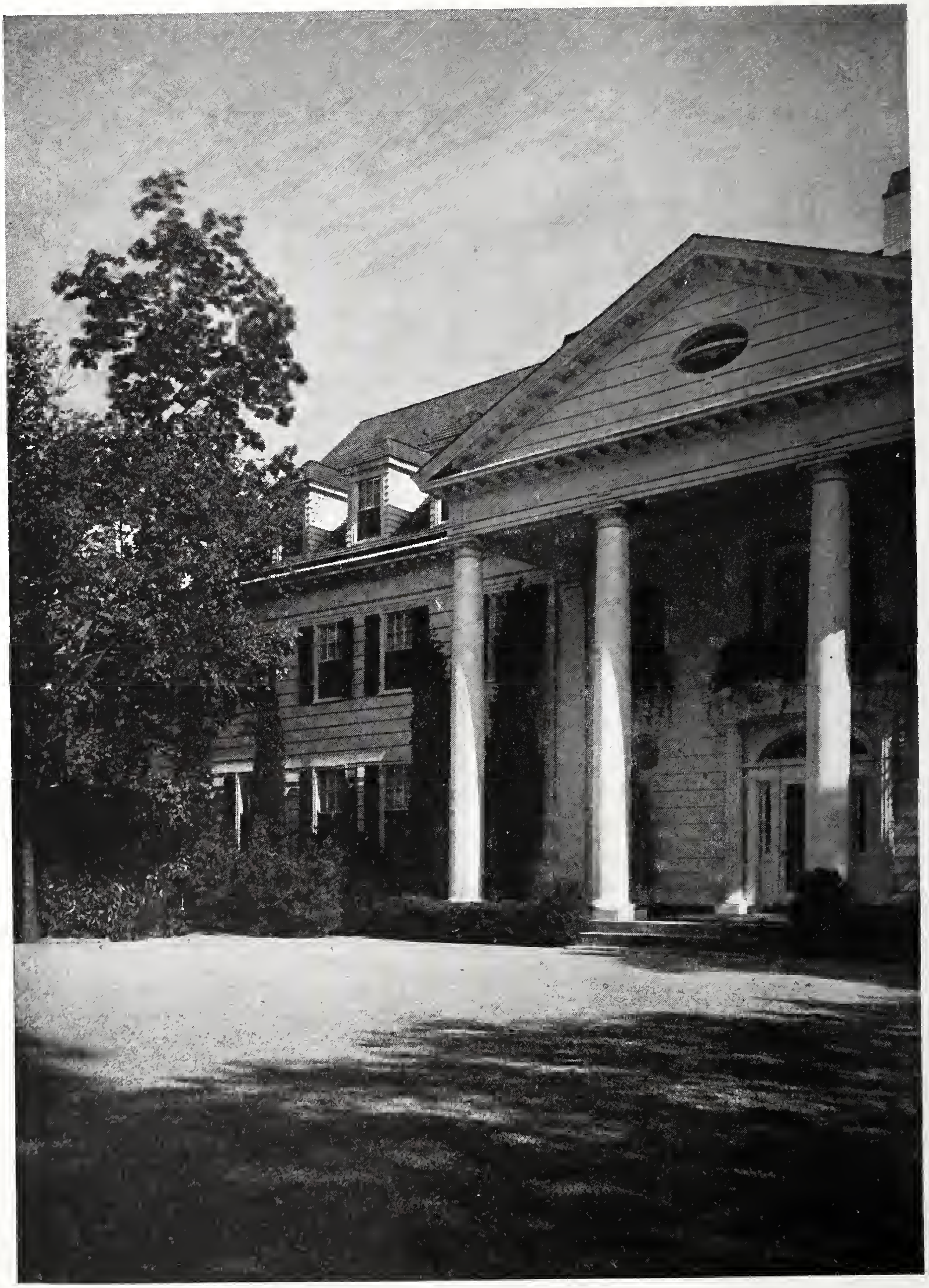

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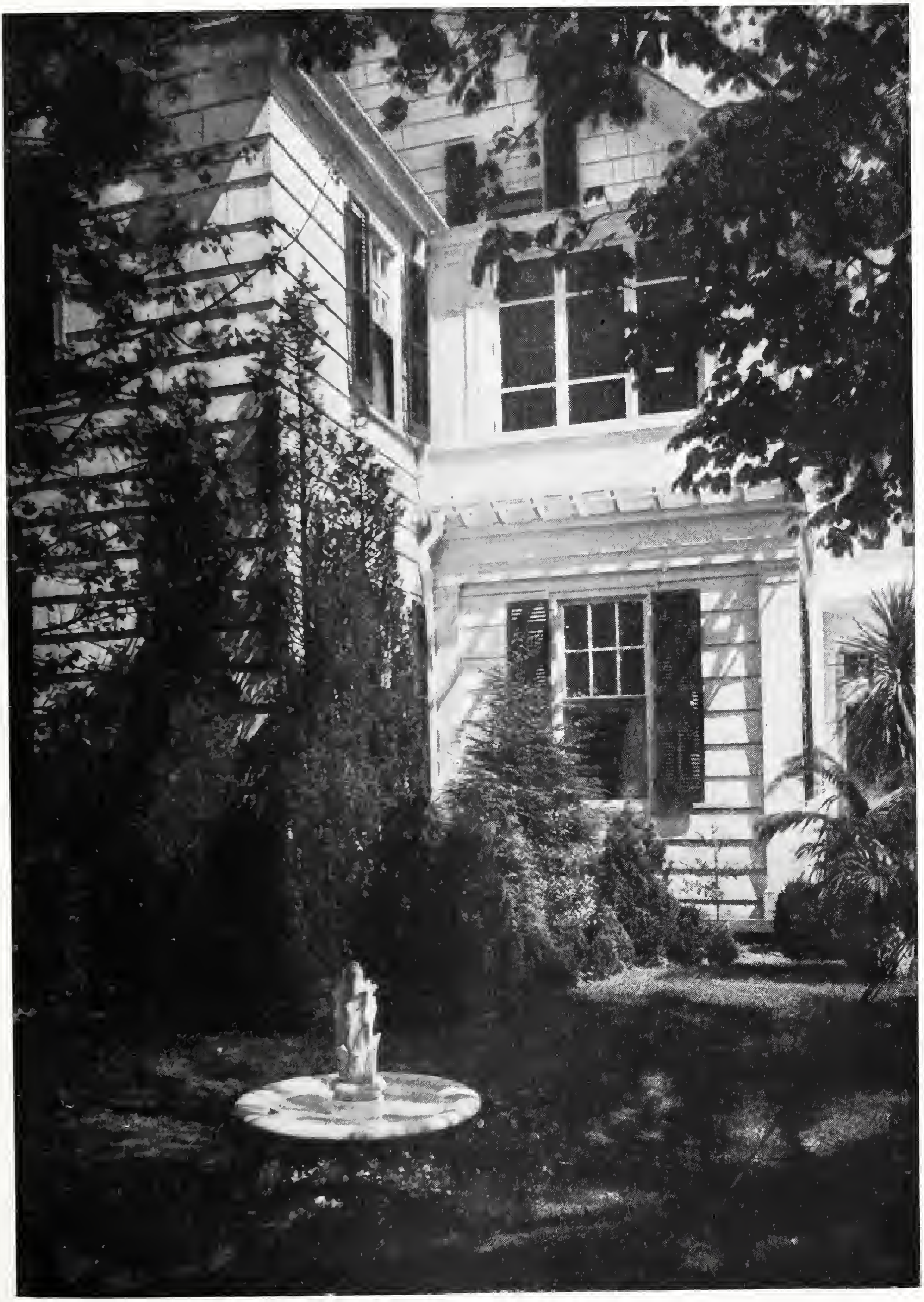

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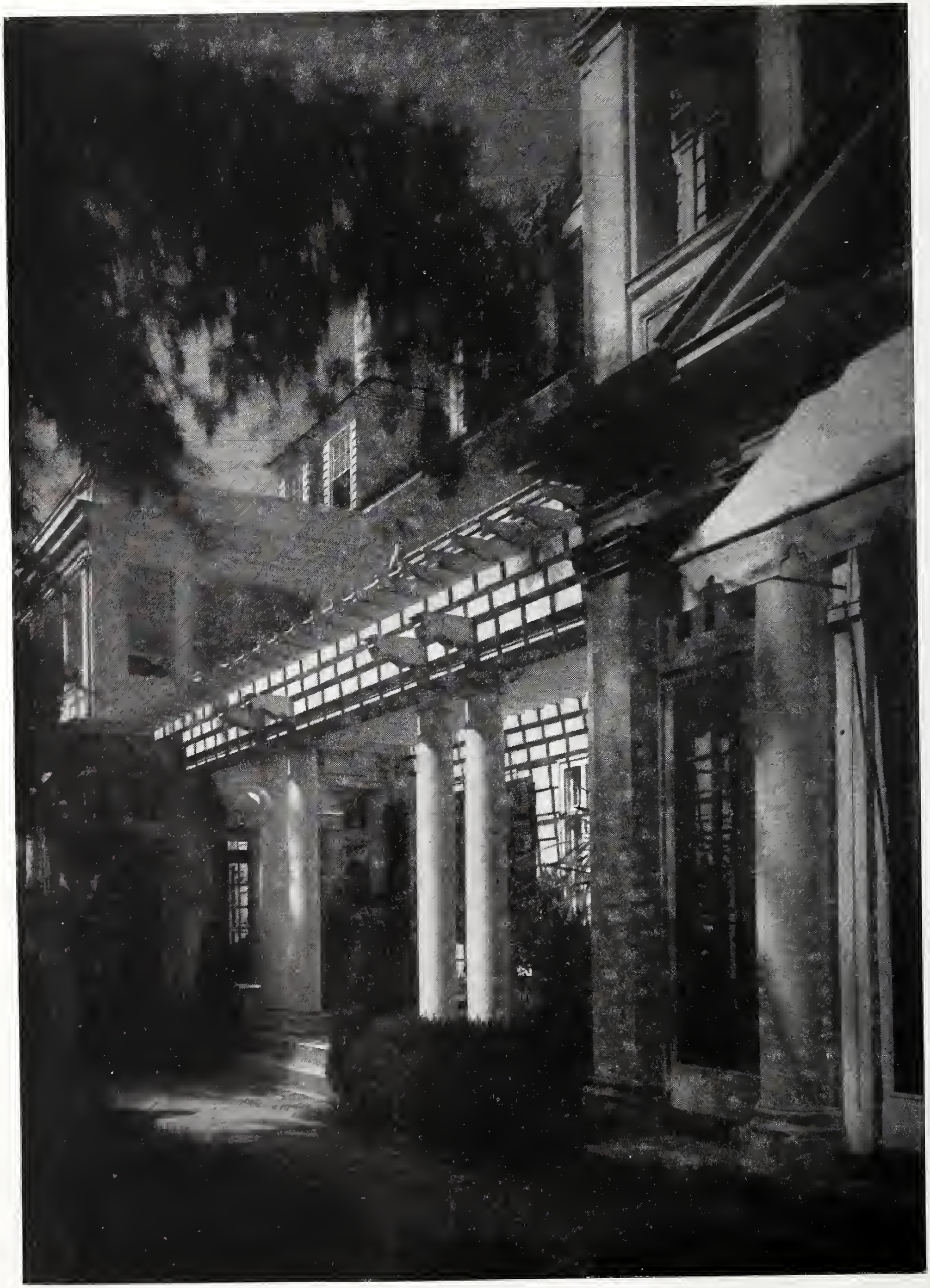
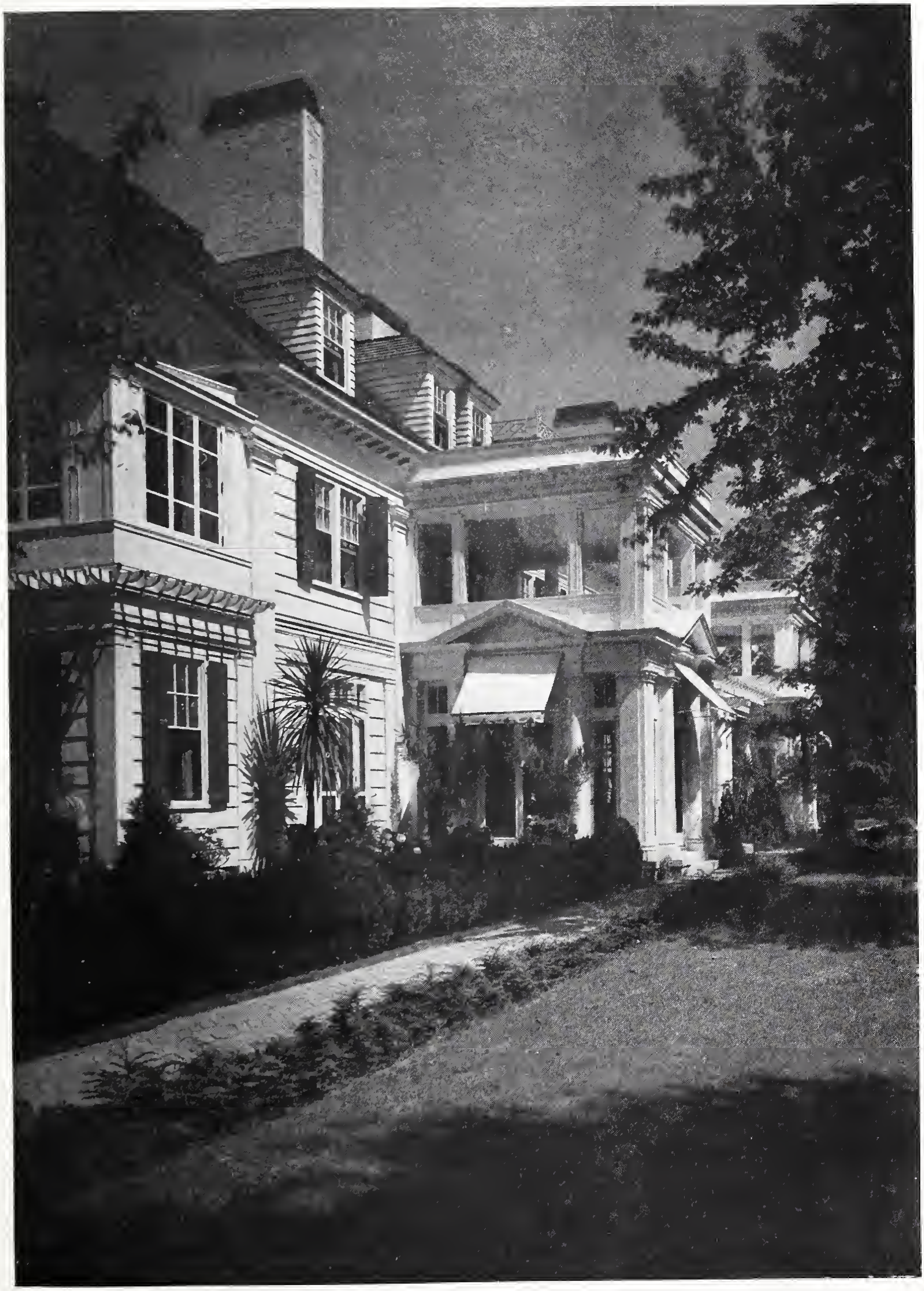
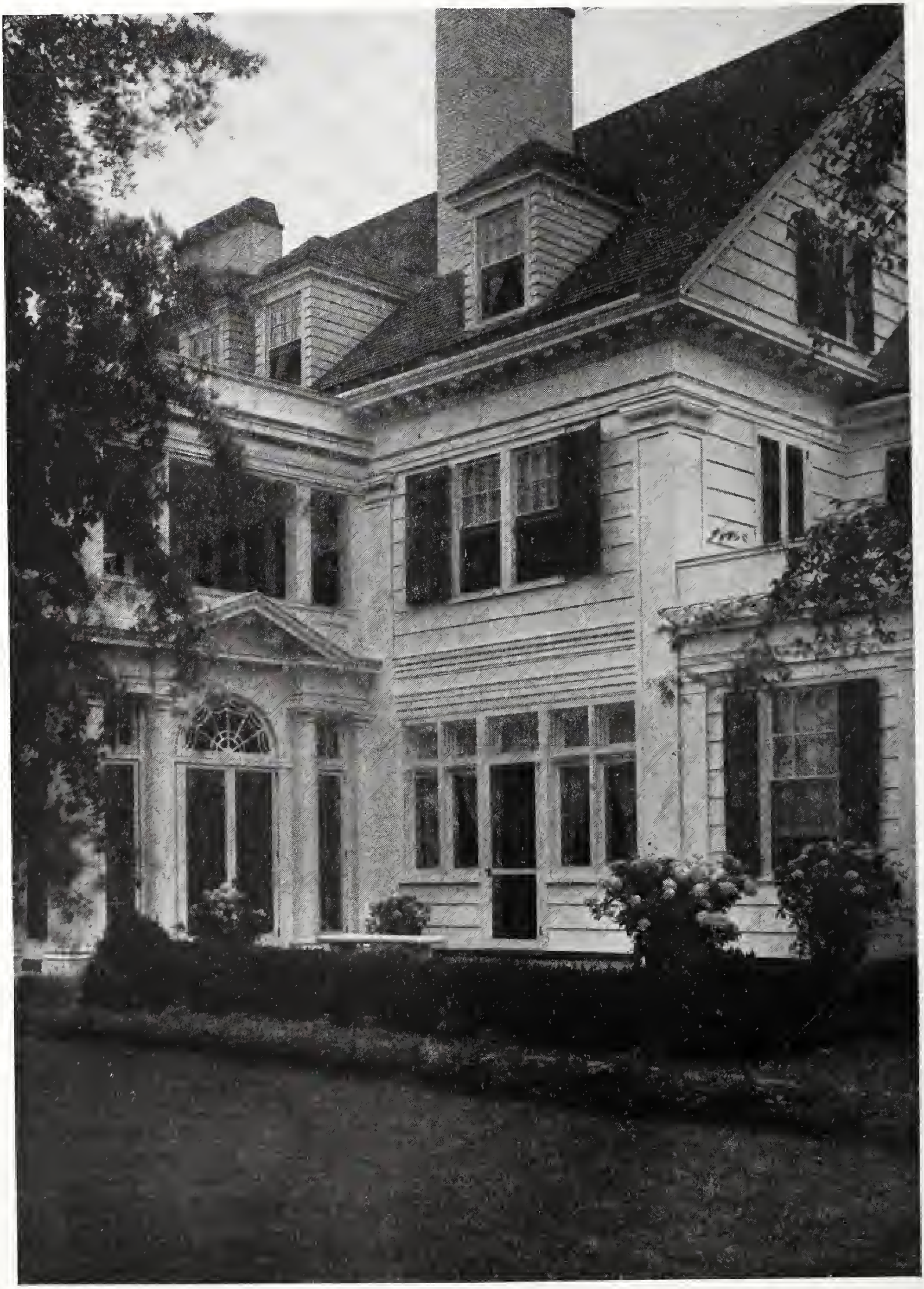


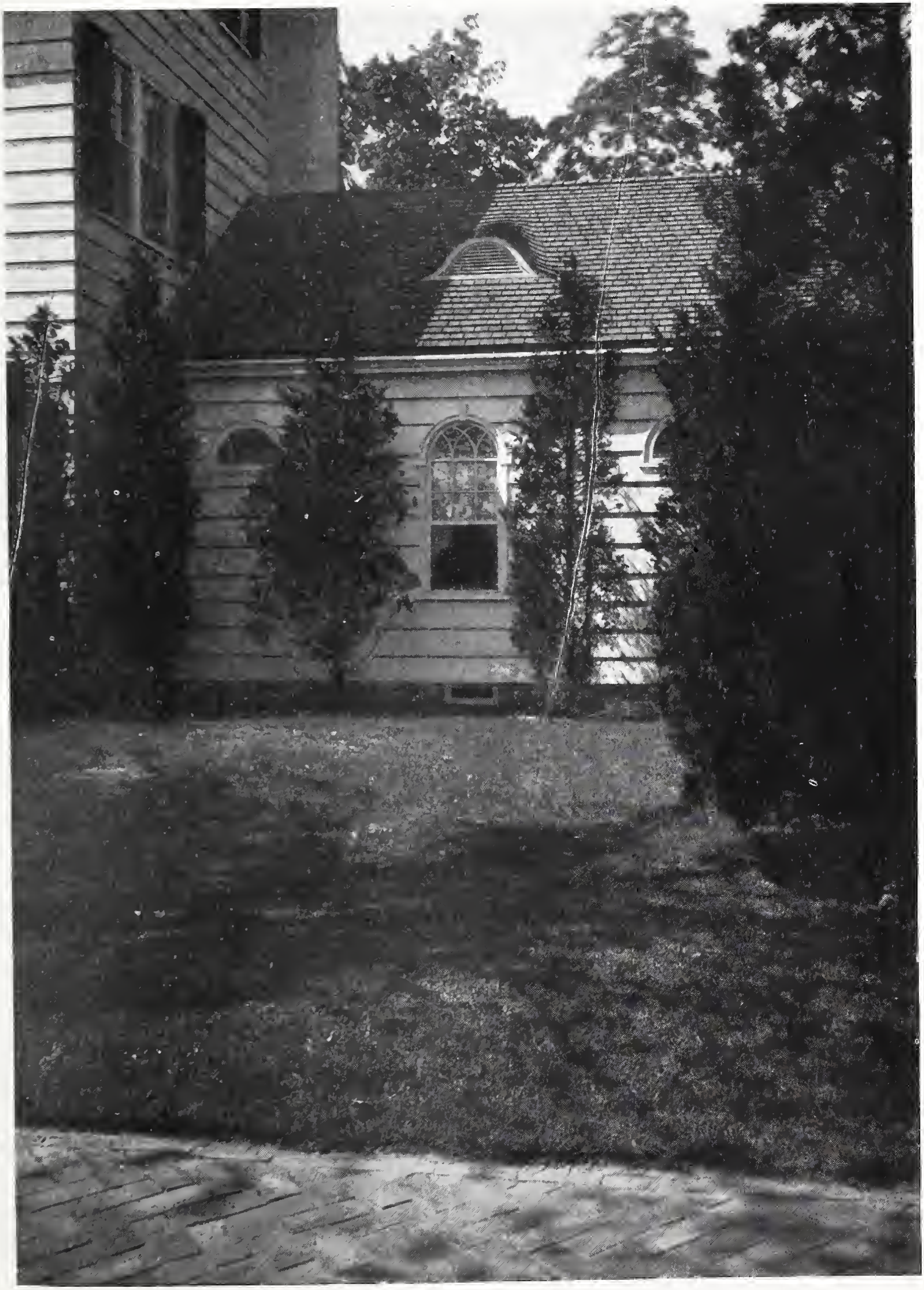
PERGOLA BETWEEN THE PORCHES ON GARDEN FRONT--RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



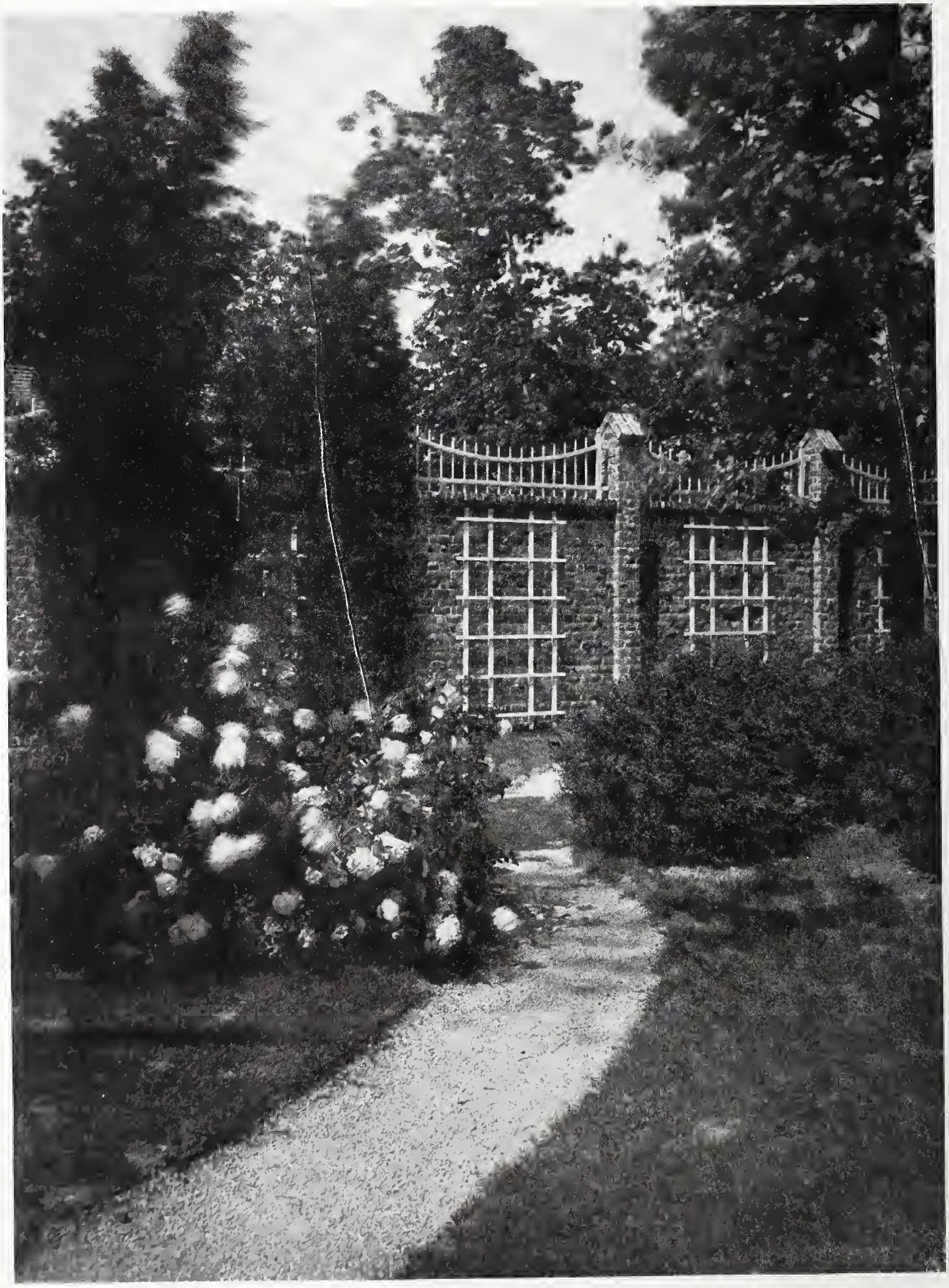
GARDEN FRONT, FROM THE SOUTHWEST—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



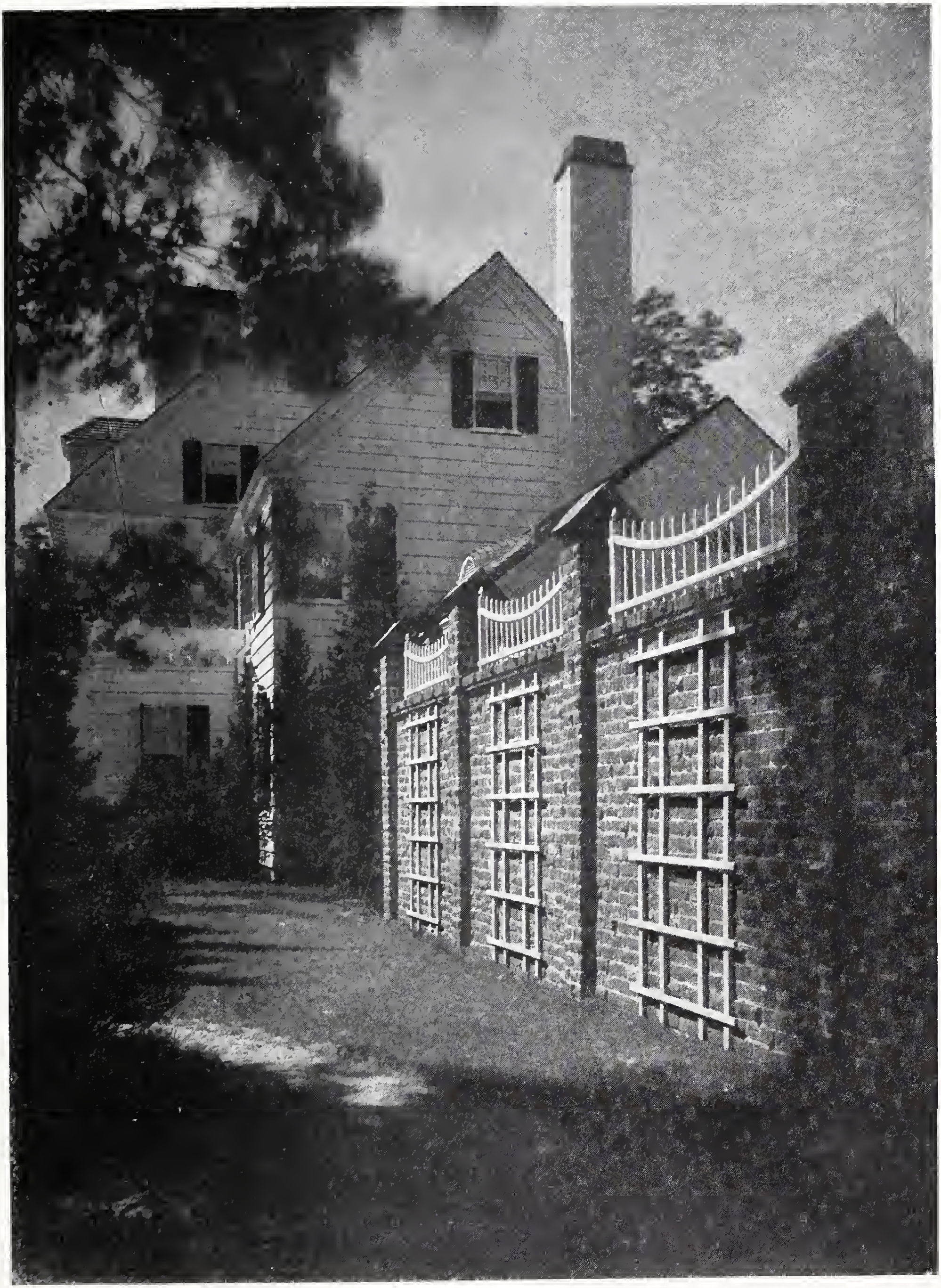
SOUTHEAST CORNER OF MAIN HOUSE—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



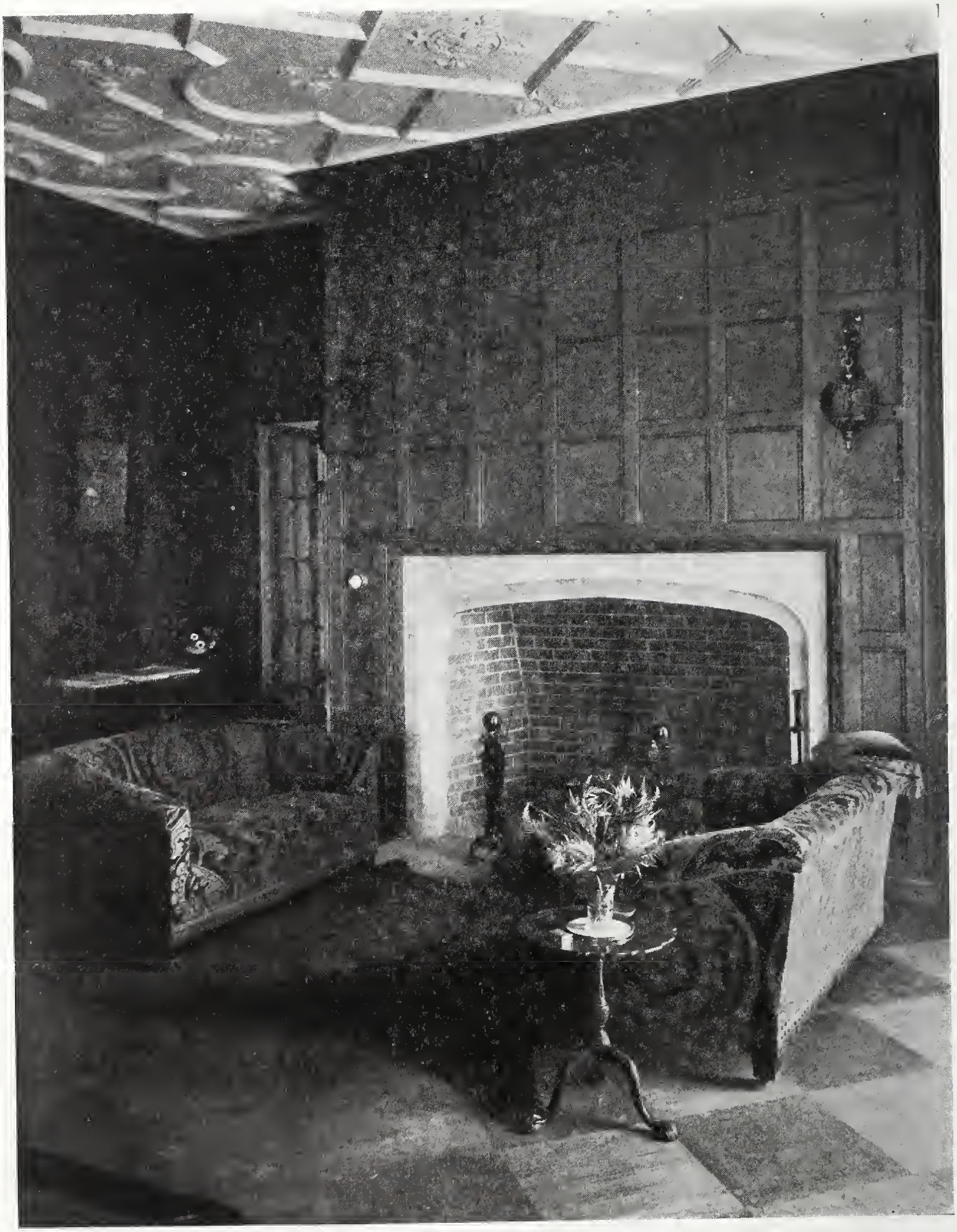
KITCHEN WING—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



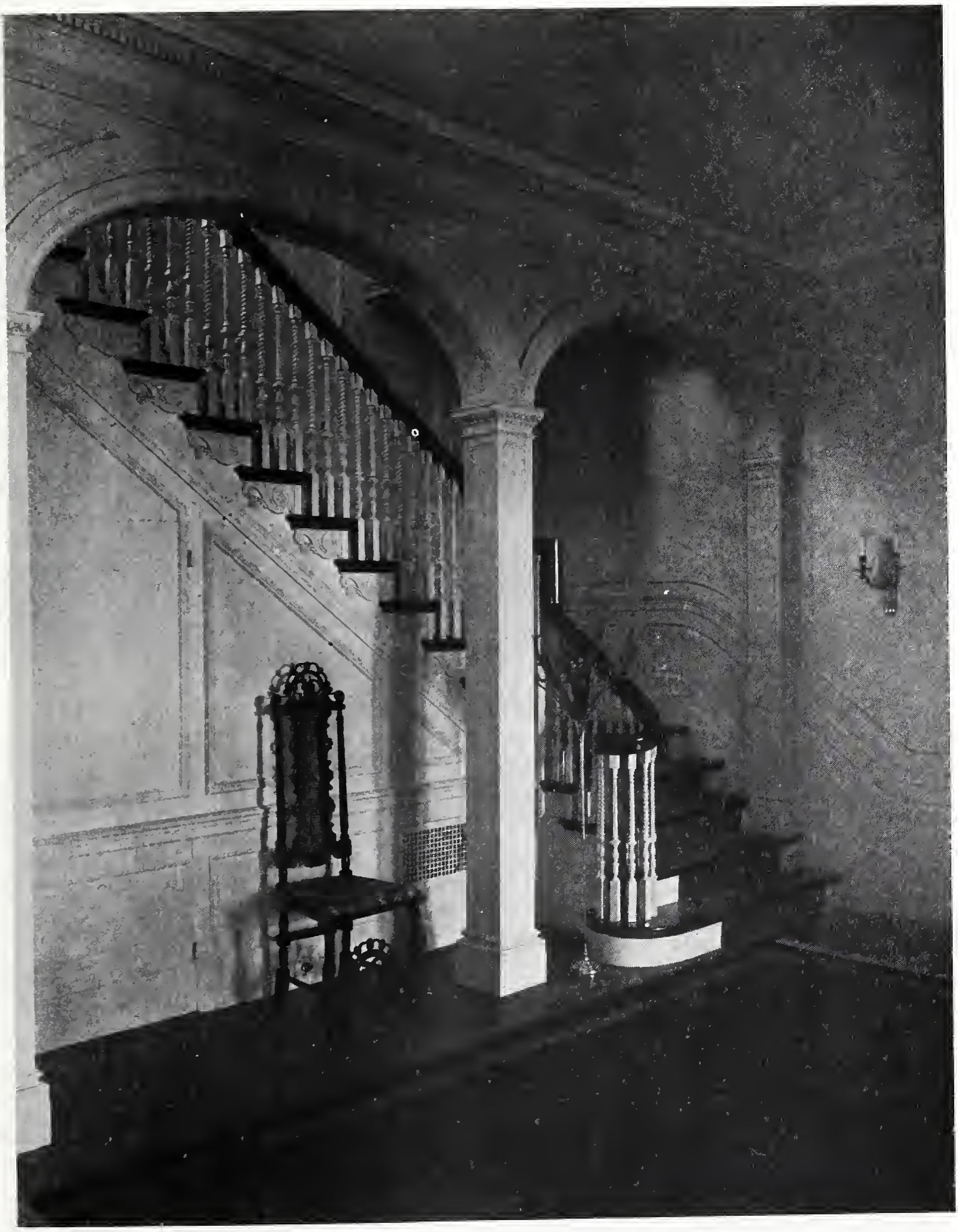
WALL OF SERVICE COURTYARD—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



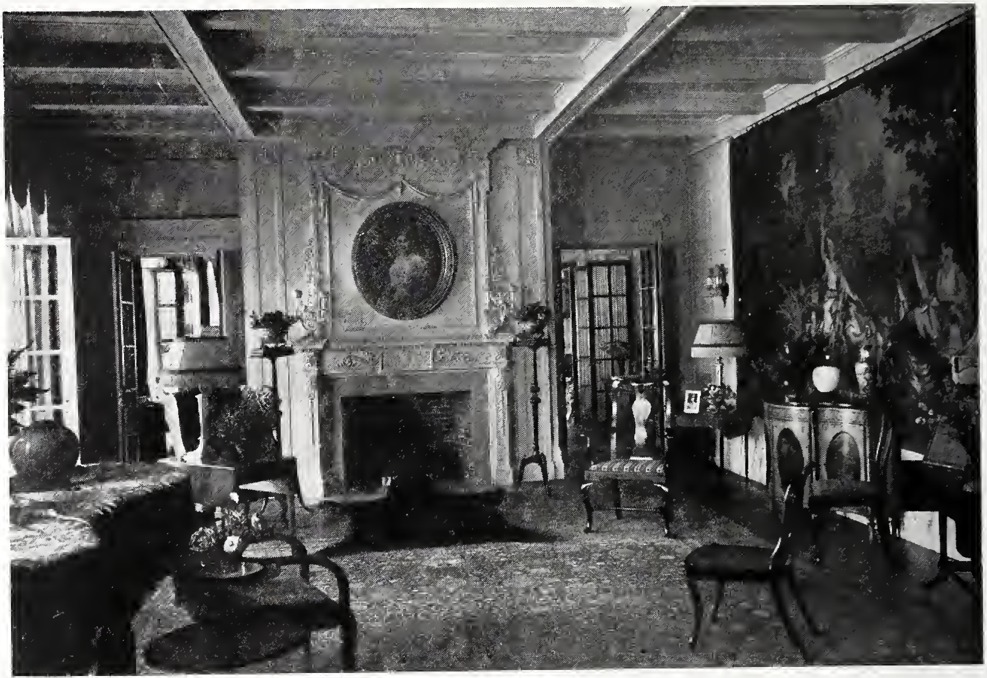
WALL OF SERVICE COURTYARD AND KITCHEN WING—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



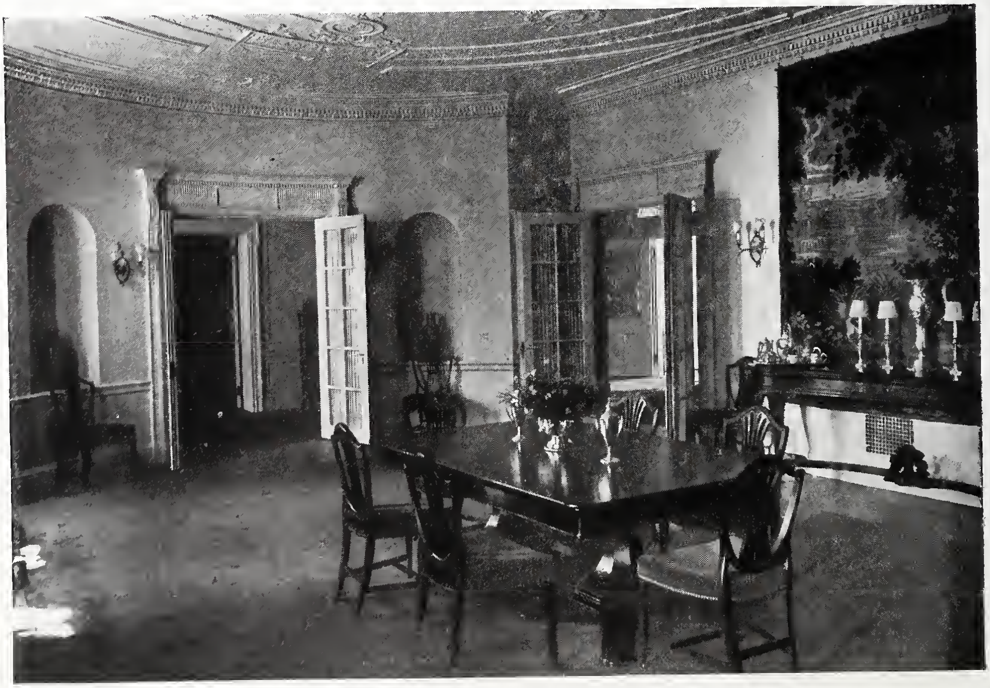
FIREPLACE IN GAME ROOM—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



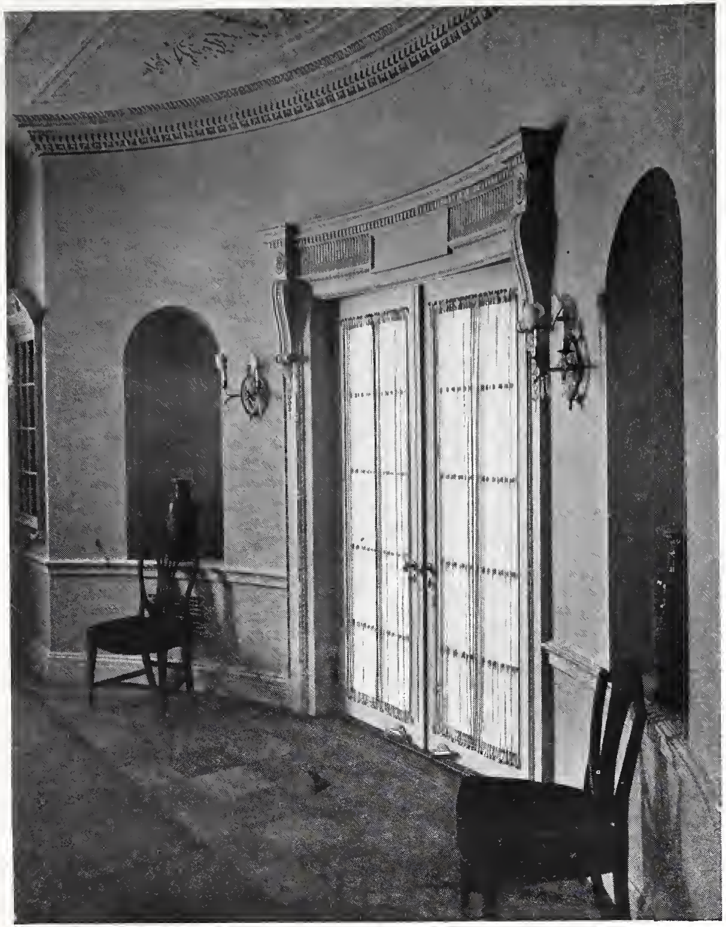
CORNER OF STAIR HALL—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I. ALFRED C. BOSSOM, ARCHITECT.



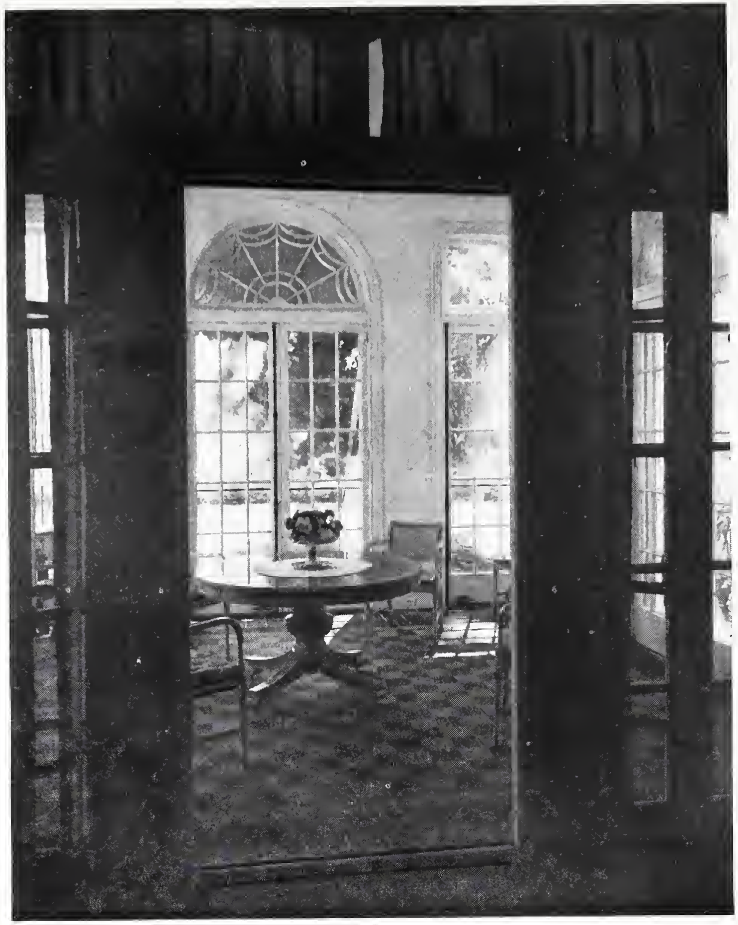
MUSIC ROOM—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I.
Alfred C. Bossom, Architect.



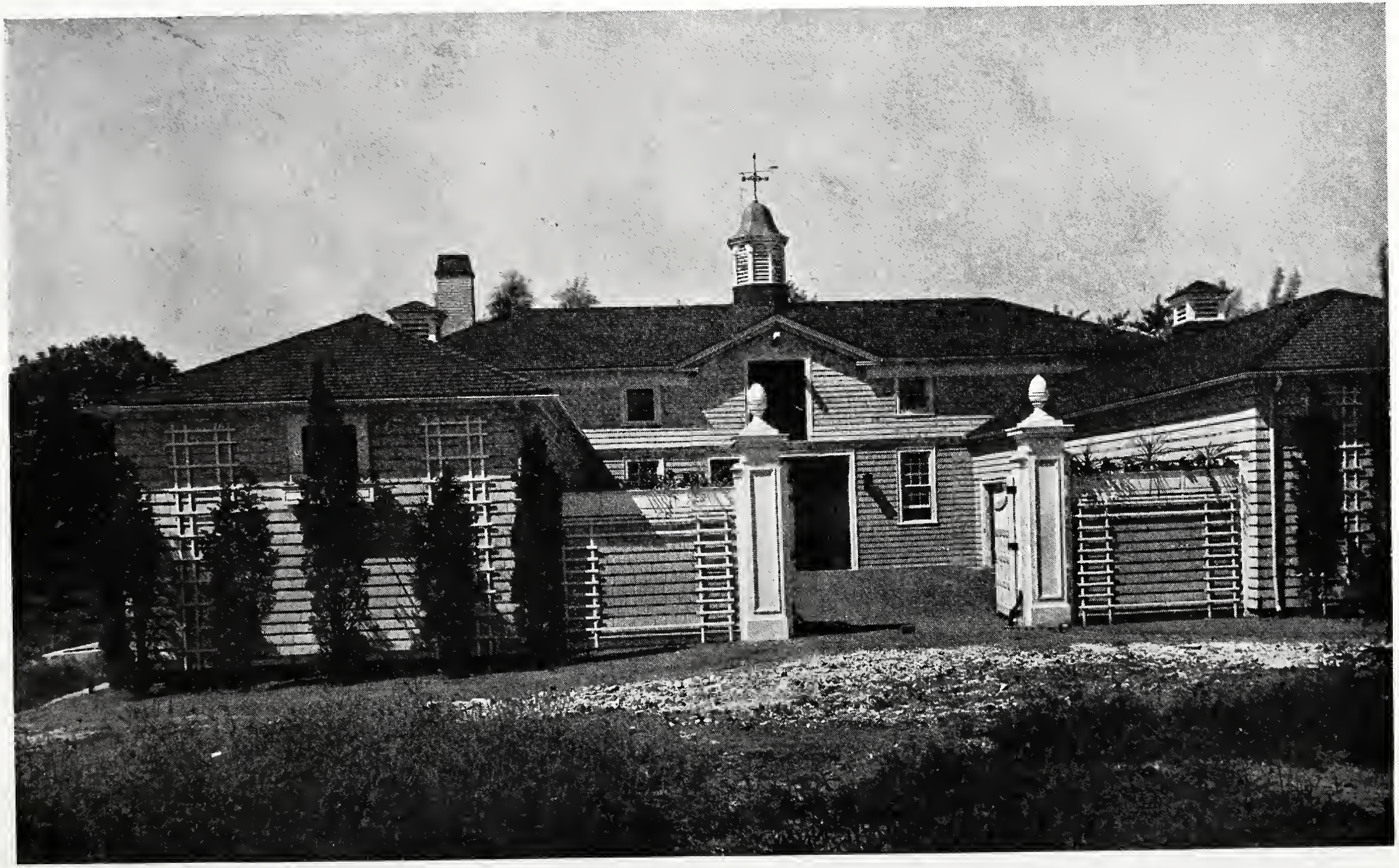
DINING ROOM—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I.
Alfred C. Bossom, Architect.



ENTRANCE TO DINING ROOM—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I.
Alfred C. Bossom, Architect.



BREAKFAST ROOM—RESIDENCE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I.
Alfred C. Bossom, Architect.



STABLES—ESTATE OF J. W. HARRIMAN, ESQ., BROOKVILLE, L. I.
ALFRED C. BOSSOM, ARCHITECT.

too, modeled excellently, of a good rough texture, relieved by the interesting lattice and railing, continuing the play of tiny points of light which runs through the design of the whole south front. Altogether the interesting massings and groupings of this front, with its vigorous light and shade, are refreshing after the somewhat thin, austere, uninterestingly correct residences so often to be found in our countrysides. And this effect is well carried out in the planting along the front, at the corners especially, to soften the angles. The homelike appearance has been maintained throughout, particularly in the little garden off the bachelors' rooms in the west end of the house. As a detail, the tennis court is hidden from the house, being reached by a path through the woods, thus avoiding the unfortunate effect that a court with its nets is bound to make.

Inside, the rooms are richly yet simply done. The more important rooms, except the game room on the west, are painted old white—not "wiped," but a straight flat color. The exquisitely treated design of the entrance hall has been mentioned. In its paneling, stairs, arches and cornice it is a sympathetic rendering of the more sophisticated early native style, of the type developed in the mansions of the cities. The music room is a fine apartment. Its scheme of decoration is to offset the effect of light of the large windows against a great tapestry on the opposite wall—a scheme used also in the dining room. The beamed ceiling of the living room seems too heavy for the delicacy of the decorations below, but this is a legacy of the older part of the house.

A formal Adam design is the dining room, with somewhat less stiffness that is too often a characteristic of such rooms. As a detail one could have wished the doors to be solid, for there is evidently enough glazed sashes in the house. Interesting, too, is the breakfast room and the fine rich harmony of the English game room, with its decorated ceiling, large fireplace and crimson coloring. Upstairs the bedrooms are of the same old white coloring, simply decorated in molded panels (in the case of Mrs. Harriman's boudoir materials are inserted in the panels) that has become the style in our large country houses.

It is evident that this work of Mr. Bossom's typifies the best kind of our modern architecture, boldly imagined as it is, executed in high technical skill and in the best of taste—that is, quiet taste—for it embodies the ideals of simple living, ideals that the stern demands of the times will force upon even the most heedless.

ARCH OF TITUS AND
THE COLOSSEUM, ROME.

THE CASE AGAINST ROMAN ARCHITECTVRE

By ARTHVR KINGSLEY PORTER

IN the course of an article published in the Architectural Record some months ago, my old teacher, Professor Hamlin, quoted with disapproval certain criticisms of Roman art from my youthful work on *Medieval Architecture*. That the ideas in question are such as might readily find no favor with Professor Hamlin does not surprise me. It is entirely orthodox to admire Roman architecture. Of all historic styles it presents the closest analogies with the architecture of the nineteenth century in America. It is the style upon which our modern architectural education is based. It is also, of all historic styles, evidently the least illustrative, the most material. Something over a decade ago I came to the rather impulsive conclusion that the thoughtless admiration and imitation of the Roman style was producing a deleterious effect upon contemporary American art. In writing my *Medieval Architecture* I felt it almost a duty to do what I could to call attention to the prosaic character of Roman architecture.

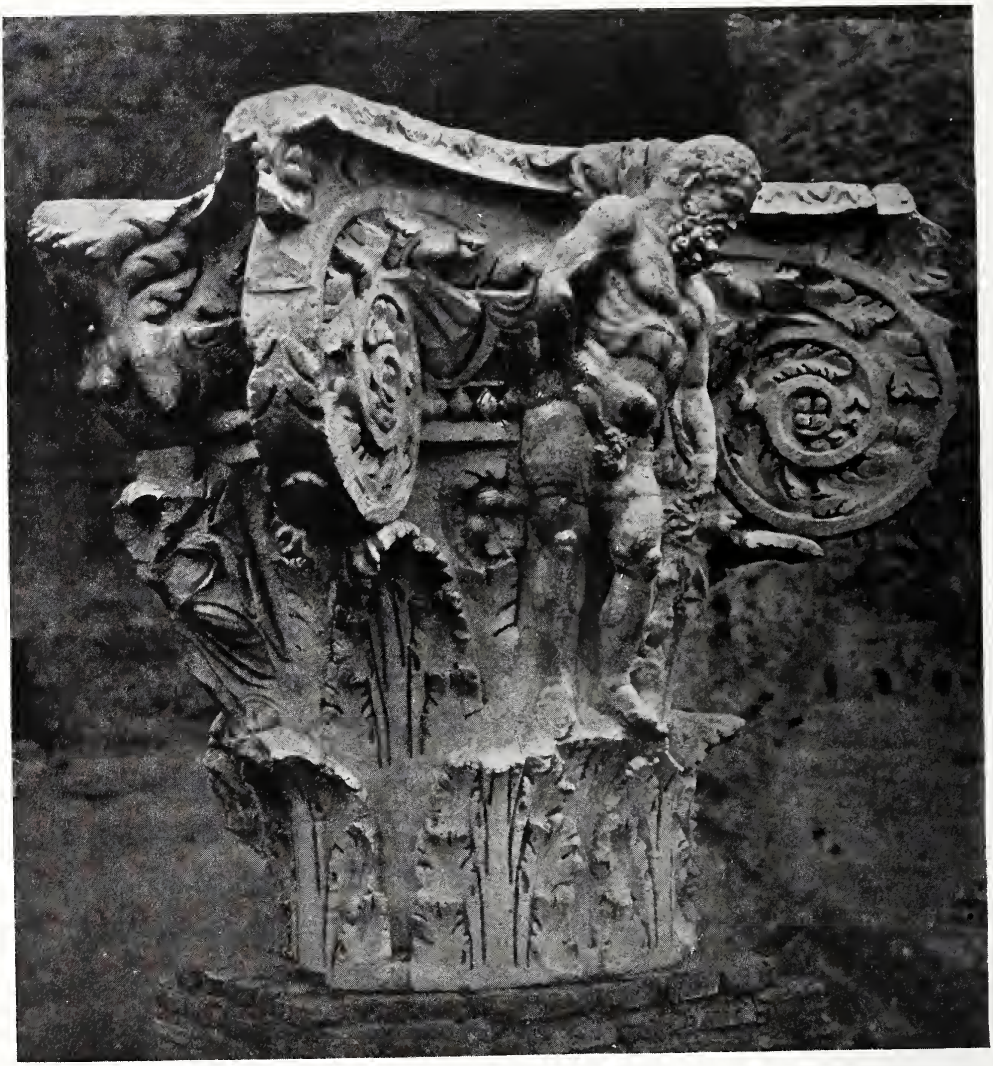
The difference of opinion between Professor Hamlin and myself is, therefore, deep-seated. *De gustibus non est disputandum*. In matters of this sort there is no absolute proof to which one can have recourse. It is a question of feeling—really of creed—and as differences of religion are commonly the ones to which men cling most tenaciously, for which they are ready to sacrifice themselves and wrong others, so for the lover of art his esthetic creed is, perhaps, the most deeply rooted part of his inner being, that which touches him most nearly when questioned by another.

The years that have passed since I wrote *Medieval Architecture* have brought changes in my point of view. Further study has proved to me that the deficiencies of contemporary art cannot altogether be laid at the door of Rome. Inspired by the same models, Palladio produced an architecture highly intellectual and McIntire an art infinitely refined. Very poor indeed has been much of the architecture imitated from the most exalted models of Greece and of the Middle Ages. The conclusion seems to be forced that for the production of good architecture it matters little *what* one copies, but it matters very vitally *how*.

As for Roman architecture itself, I have come to know it much better since the days when my first book was written. At that time my lips had barely touched the golden cup of Italian beauty. Since, the opportunity has come to linger long in Rome; to draw and photograph among the ruins of the Agro, to poetize with Carducci on the Aventine or in the Baths of Caracalla. Often as I have stood in the august presence of the Roman Forum it has never been without emotion. I have studied, with a feeling almost of homesickness, the engravings of the eighteenth century, stimulating my imagination to conceive of the City enhanced by the solitude and silence the modern age so discordantly breaks.

Yet I cannot with intellectual integrity say that my feelings toward Roman architecture have essentially changed in these twelve years. Visions of the magic of Rome, the cypresses of Tivoli, the sweeping lines of the Campagna, the snow-capped encircling mountains, the glorious color of the weathered brickwork, haunt my memory; yet I still see, as I did a decade ago, in Roman architecture emptiness, pomposity, vulgarity.

But very little of ancient Rome has come down to us intact. The charm which invests the Baths of Caracalla or the ruins of the Palatine today was assuredly never dreamed of by the build-



CAPITAL FROM THE BATHS
OF CARACALLA, ROME.

ers. The picturesque masses, the colors, are the work of time—the most clever of artists. To conceive of these Roman buildings as they were, we must have recourse to archeology and modern restorations on paper. But do these imaginary reconstructions give an accurate idea of the esthetic effect of the architecture as it really was? May we not have missed some touch which possibly redeemed the lack of refinement? Imagine that all the scores of Wagner's Niebelungen Trilogy had been lost, and that some inferior musician should try to rewrite the work on the basis merely of the plot and a few snatches of melody. The result might easily be as meretricious as the restorations of Roman ruins. How can we prove that something like this may not have happened in the case of Rome? When we contrast the actual beauty of the ruins of the Forum with the monotony of the paper restorations, when we note in the latter the lack of balance in the mass, and the excessive symmetry in the details, how can we be certain that the ancient buildings may not have possessed some secret of beauty, some use of color or of asymmetry unknown to modern archeologists, but which redeemed a design that, only because of our lack of knowledge, seems lifeless and banal?

Future investigations may possibly show that Roman architecture was not as dull as it now appears. I fear, however, that this is exceedingly unlikely. The frescoes of Pompeii quickly dispel any illusion that the Romans possessed a sense for color. An abundance of Roman architectural detail has come down to us in good condition; and this, with very rare exceptions, is not such as to lead us to suppose that the Romans possessed sensitive esthetic perceptions in architectural art. Poor detail is not necessarily incompatible with good architecture (although the modern idea that good architecture must necessarily have bad detail is obviously false); nevertheless, the detail is apt to be eloquent of the spirit of the whole. When we find detail that is made commercially, mechanically, thoughtlessly, perfunctorily, we have the work, not of an artist, but of a materialist, and the larger features of the design are nearly certain to be permeated by the same qualities. The true artist may delight in the broad effect; he may take pleasure in producing that effect in simple materials, but he can never be satisfied with commercial detail. It is this lack of sensitiveness in Roman architecture, the absence of an artistic conscience, the readiness to subordinate all means to the end of an immediate effect, the obviousness, the lack of depth, with which I quarrel. There are two kinds of architecture, as there are two kinds of painting, of sculpture, and of literature: One is artistic, created for the joy of bringing into the world a beautiful thing—material compensation may or may not be given, but is secondary; the other is commercial, made primarily for expediency, for money, for fame. Roman art is of the commercial variety. Of that poetry which breathes so potently from the existing ruins, the same monuments, when new, must have been singularly deprived. They were opportunist structures, lacking in intellectual and emotional content.

There is a curious parallelism between the art, the literature and the life of Imperial Rome. I experience the same sensation of inexpressible weariness in studying Roman architecture and in reading of Roman banquets, as, to cite one example among many, in the *Satyricon* of Petronius. What a bore these feasts, this endless over-eating and over-drinking must have been! How useless the magnificence, the throngs of slaves, the expert cooks able to prepare pork so that the entire company mistook it for duck! As Mr. Clapp renders Palazzeschi:

> With luxury's glamor
> the table is spread.
> Exuberant flowers,
> gold vases and silver . . .
> The dishes before them
> change hurriedly ever;
> soups steaming and purées
> delicious and patés
> most tasty by thousands . . .
> From gardens forbidden
> herbs skilfully seasoned,
> woodcock and pheasant
> pass by in the dishes
> of these the unhappy;

most tender of green things
and sweetmeats the rarest,
incredible sweetmeats,
fruits red as a ruby,
wines too of all colors. . . .

This effort, this expense of energy failed of its purpose, because there was lacking the spirit of joy. I suspect that the modern *contadino* takes far greater delight in his *pasta* and wine in the *osteria* that nestles among ruins of the Palatine, perhaps on the very site of the golden house where Trimalchio gloried and drank deep. It is evident that the Romans themselves grew tired of the unending series of gluttonous revels. Petronius doubtless exaggerates the grossness and stupidity of Roman society; he nevertheless was an eye-witness of its excesses, and his testimony carries weight. This is how he describes an episode at a banquet, when the impossible Trimalchio calls his architect (*lapidarius*) Habinnas and orders his tomb:

"Trimalchio then ordered a copy of his will to be brought, and this he read from one end to the other, while the whole company heaved sighs. Then looking at Habinnas, he said, How about it, my friend? Have you built my tomb as I ordered? I ask you particularly to put at the foot of my statue my little dog, crowns and a box of perfumery. . . . Moreover let the tomb measure one hundred by two hundred feet; and let there be planted about it all sorts of fruit trees and many vines, for it would be absurd that I should be said to have cultivated my lands while I lived; but neglected those where I must inhabit so long. Therefore I should like to have this inscription placed on the tomb:

"This Monument does not Belong to My Heirs.

"Furthermore, I shall take care in my will that no one injures me after my death; for I shall appoint one of my freedmen to guard my tomb, to see that no one commits there any nuisance. I charge you also, Habinnas, to sculpture on my tomb ships under full sail [this in reference to the sources of Trimalchio's wealth], and my portrait is to show me sitting on a tribunal with five golden rings on my fingers, giving silver coins to the populace out of a sack; for you know well I have given a public banquet and two pieces of money to all who came. You may therefore also represent, if you please, the dining hall and all the people eating with pleasure. At my right you will place a statue of my wife Fortunata holding a dove in one hand and leading a dog on a leash with the other, and you will put there also my dear Cicaron and great jars of wine well corked up. One only of these shall be broken, and a child shall be weeping over it. In the middle of the sun-dial shall be an inscription so placed that any one reading the hour must perforce see my name. As for the epitaph, see if you think this is suitable:

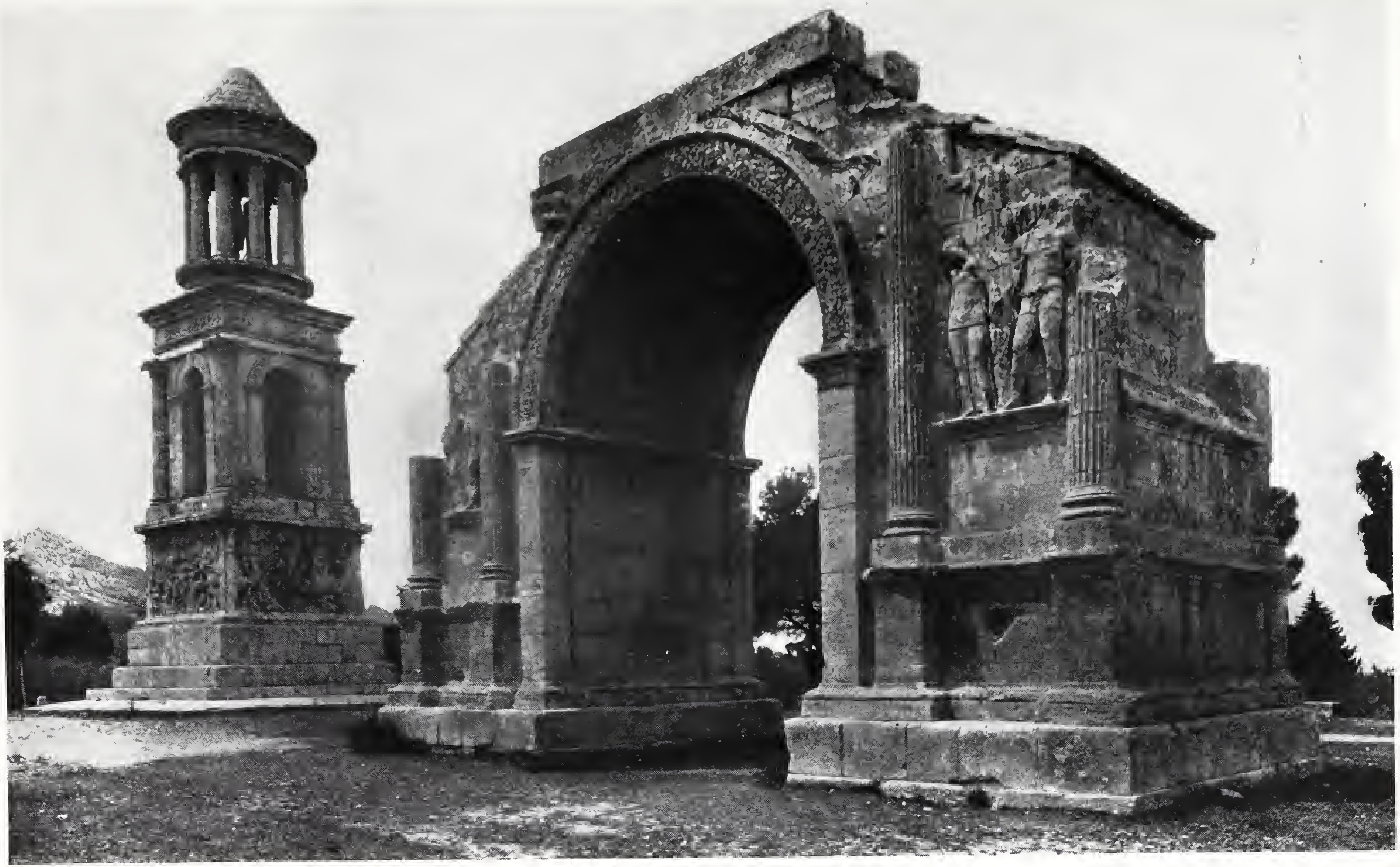
"Caius Pompeius Trimalchio, the Patron of Art, rests here. He never wished to hear the discourse of philosophers. May thou do the same . . .

"Thanks to Mercury, I have built this palace of mine in which we now are; as you know it was a house, but now it is imposing as a temple; it has four drawing-rooms, twenty bed-chambers, two marble porticoes, a tower above in which I myself sleep, apartments for my wife, an excellent porter's lodge and slaves' quarters able to accommodate a thousand persons."

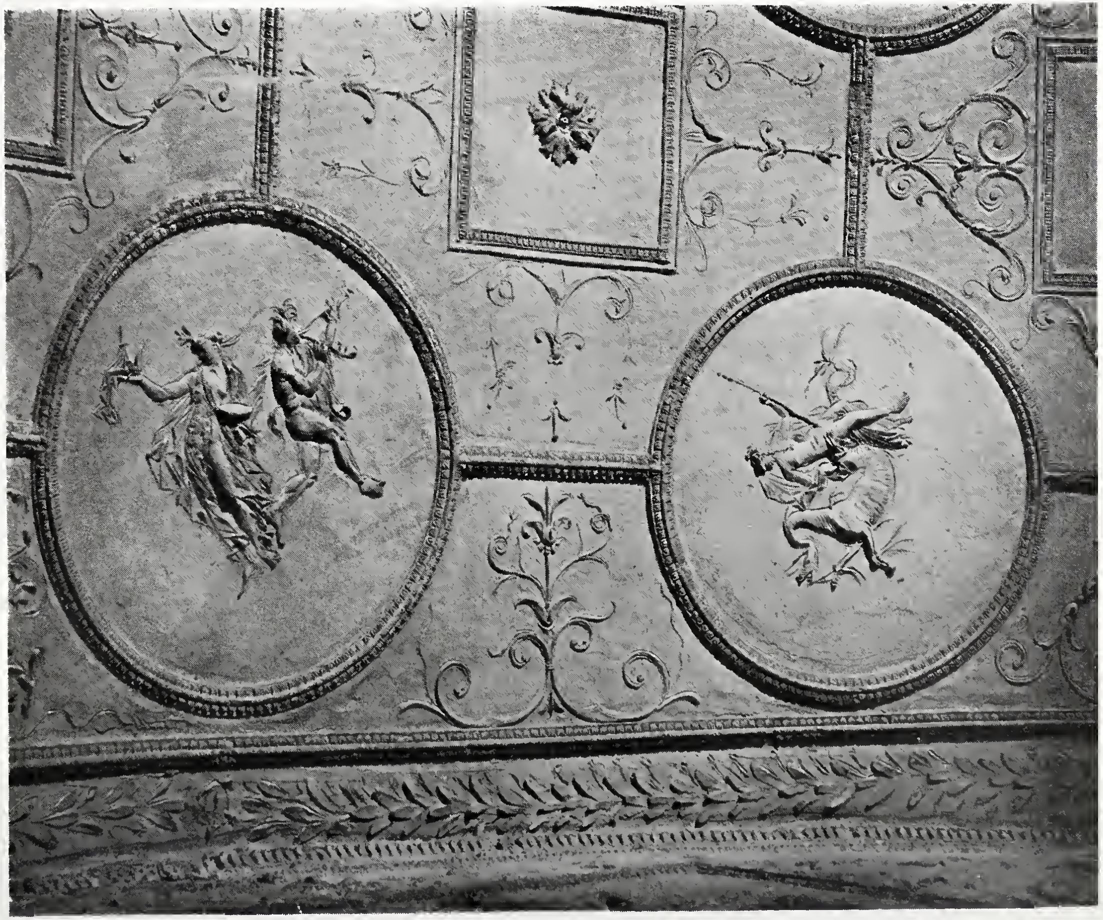
The satirist has painted for us most admirably the spirit, not only of Imperial Roman society, but of Imperial Roman art. Indeed of the inferiority of that art Petronius himself is well aware. Farther on in the same satire he explicitly complains:

"The fine arts have perished, and especially painting has left of itself only the least traces. We do not create art, but only criticize that of antiquity" (*i. e.*, Greece).

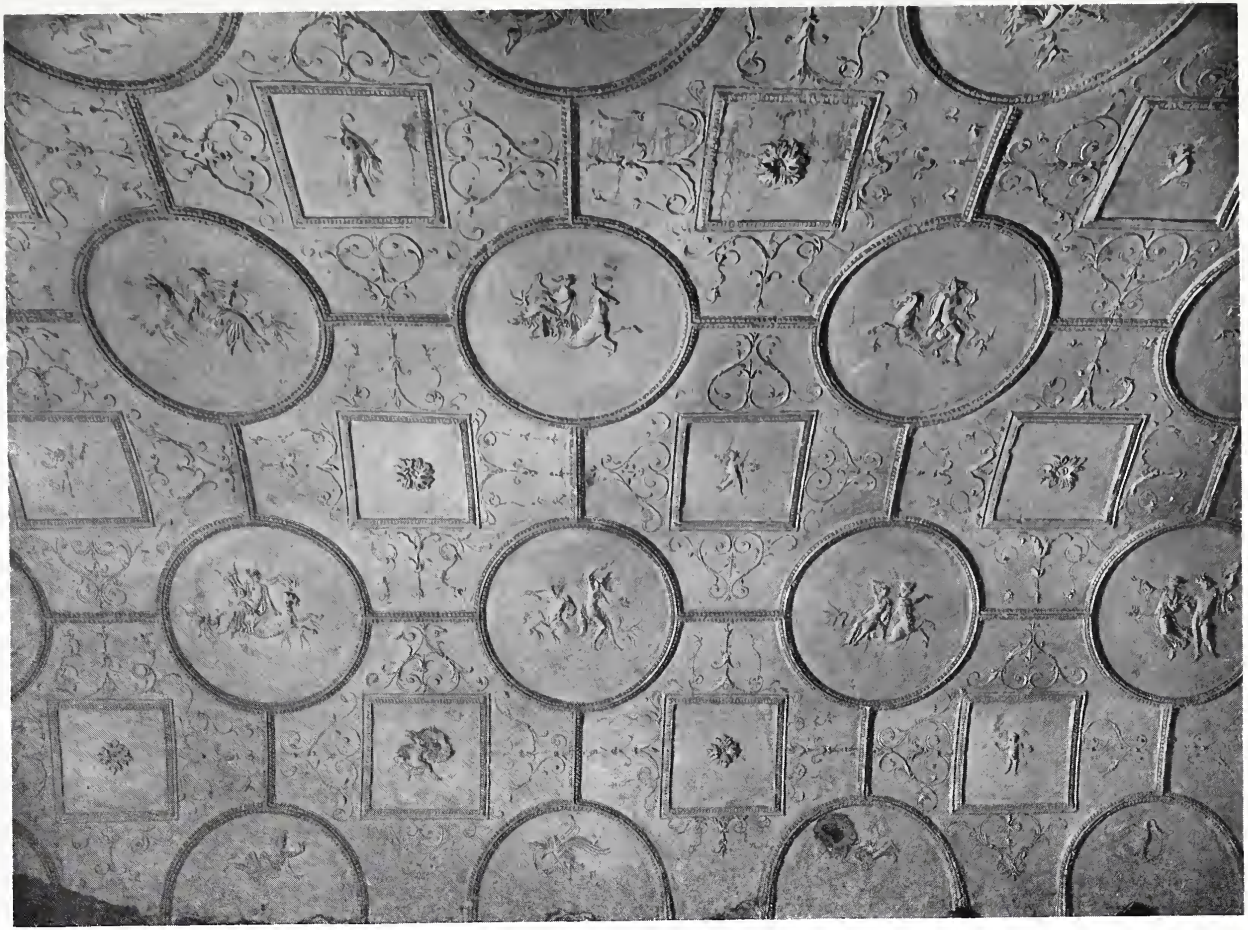
It would obviously be untrue to maintain that all Roman architecture lacks artistic vitality. Probably no generality is ever strictly true. The stucco reliefs of certain tombs on the Via Latina were modeled by a man or men who felt beauty, and who were singularly successful in transmitting that impression by a few powerful strokes on the wet plaster. Occasionally, in the carved ornament, as in the arch at St.-Remi, a real artist



ARCH OF TRIUMPH AND MAUSOLEUM, ST.-REMI, FRANCE.



DETAIL OF STUCCO CEILING IN
TOMB ON THE VIA LATINA, ROME.



DETAIL OF STUCCO CEILING IN
TOMB ON THE VIA LATINA, ROME.

ROMAN FORUM, SHOWING THE TEMPLE OF VESPASIAN AND TITUS, THE ARCH OF SEPTIMIUS SEVERUS AND THE TEMPLE OF SATURN.

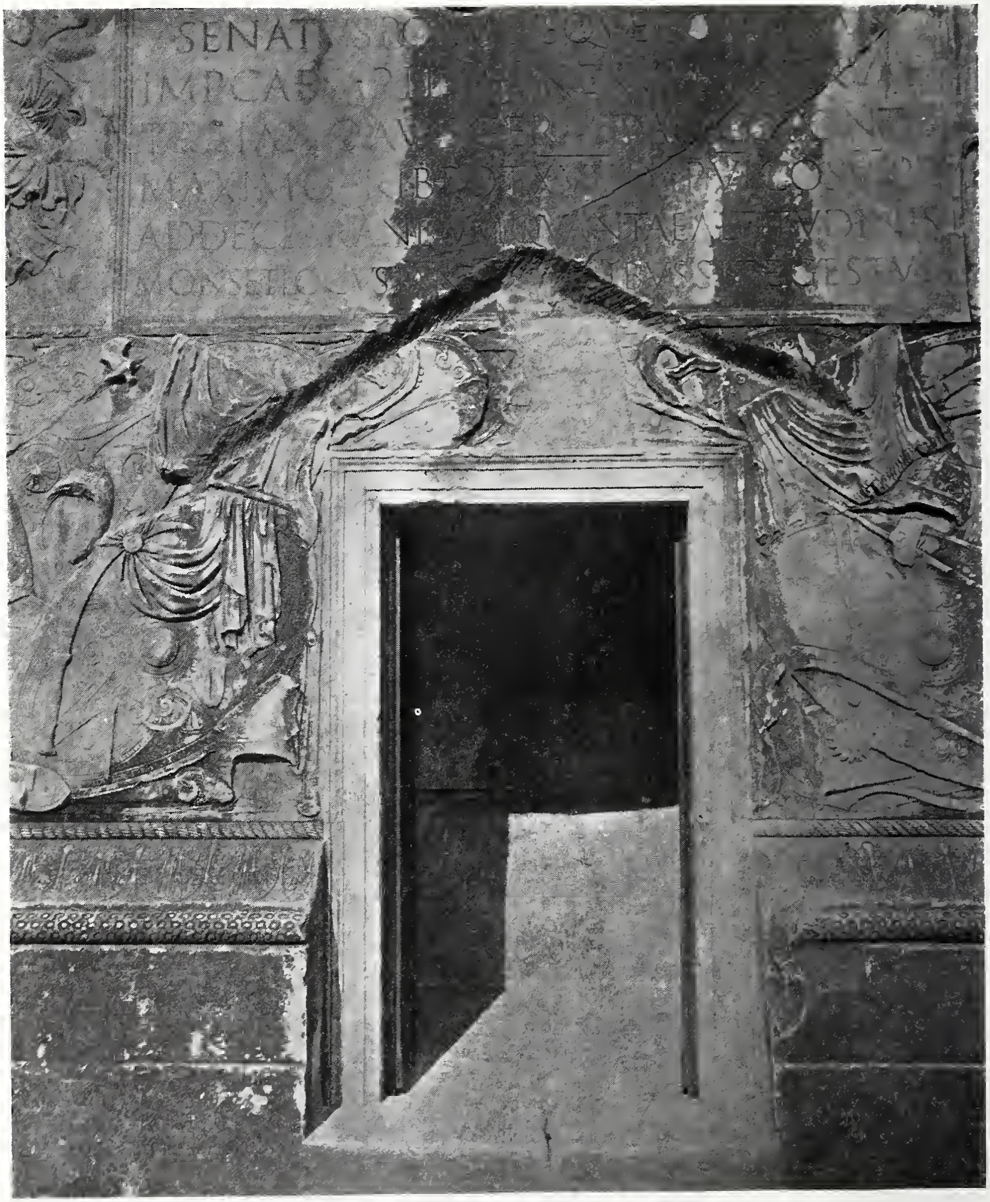
showed what life could be given to a traditional motive. Such flashes, however, only deepen the general impression of perfunctoriness in Roman work. Notwithstanding the variety of type, the skill in planning and engineering, the varied materials, the colossal scale (perhaps even because of the latter), the art as a whole is joyless, like a painful task performed more or less conscientiously, without enthusiasm. One feels intuitively that the builders cared little for the selfish Caesars in whose honor they erected triumphal arches and palaces; that they cared little for the populace, to shelter whom they built unending colonnades on the streets and forums; and, least of all, for the temples to strange, cold gods. The yoke of the taskmaster lies heavy upon their arm, as it lies upon the arm of the worker in a modern factory.

It is by this token, perhaps, that the failure of Roman architecture is most clearly proved. For the essence of all great art is joy: the joy of grandeur, the joy of poetry, the joy of gloom, the joy of tears perhaps, but always joy. The genius imbues the object of his art with a spark of this divine joy, so that it may awaken in others the same, or a kindred, emotion. Many may feel such emotion without the ability to express it; many may have the ability for expression without feeling the joy to communicate. Such will endeavor in vain to simulate or force an emotion which is not genuine. They may succeed in deluding even the keenest critics for a while, but the eternal difference of value abides unchanged, unchangeable. If there be not joy in creation, all is in vain.

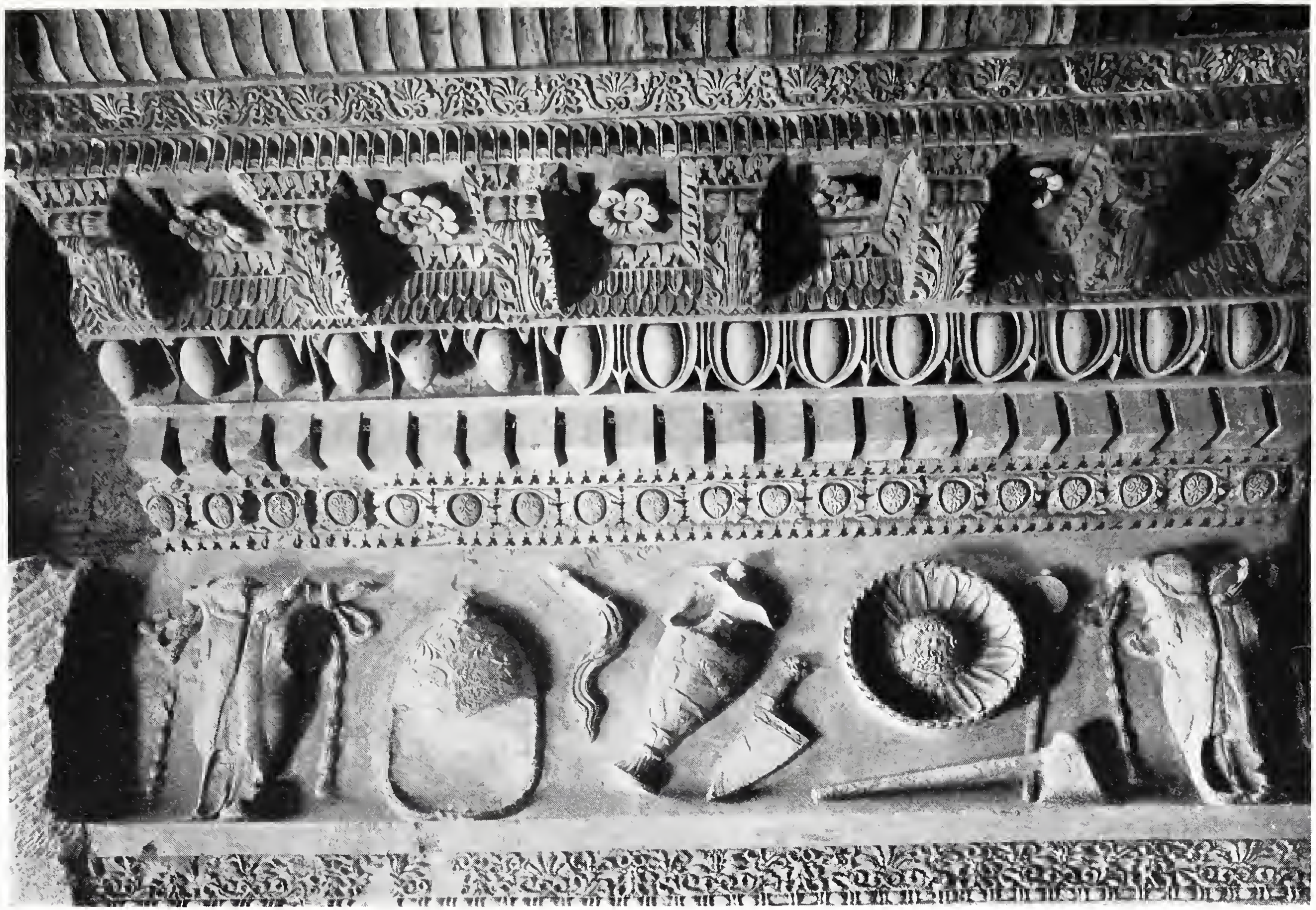
The truth of this may be illustrated in a sister art. If the *Virgin of the Rocks* at London were an original by Leonardo da Vinci, its importance would be incalculable. If it is a copy of Leonardo's painting by his pupil, Ambrogio da Predis, all the world will esteem it much less. In either case the picture is intrinsically the same. The keenest critics have been proved quite capable of mistaking the copy for the original. Is the original prized and the copy depre-

VIA APPIA, ROME, WITH THE TOMB OF CECILIA METELLA.

VILLA ADRIANA, TIVOLI.



DETAIL OF THE BASE OF THE
COLUMN OF TRAJAN, ROME.



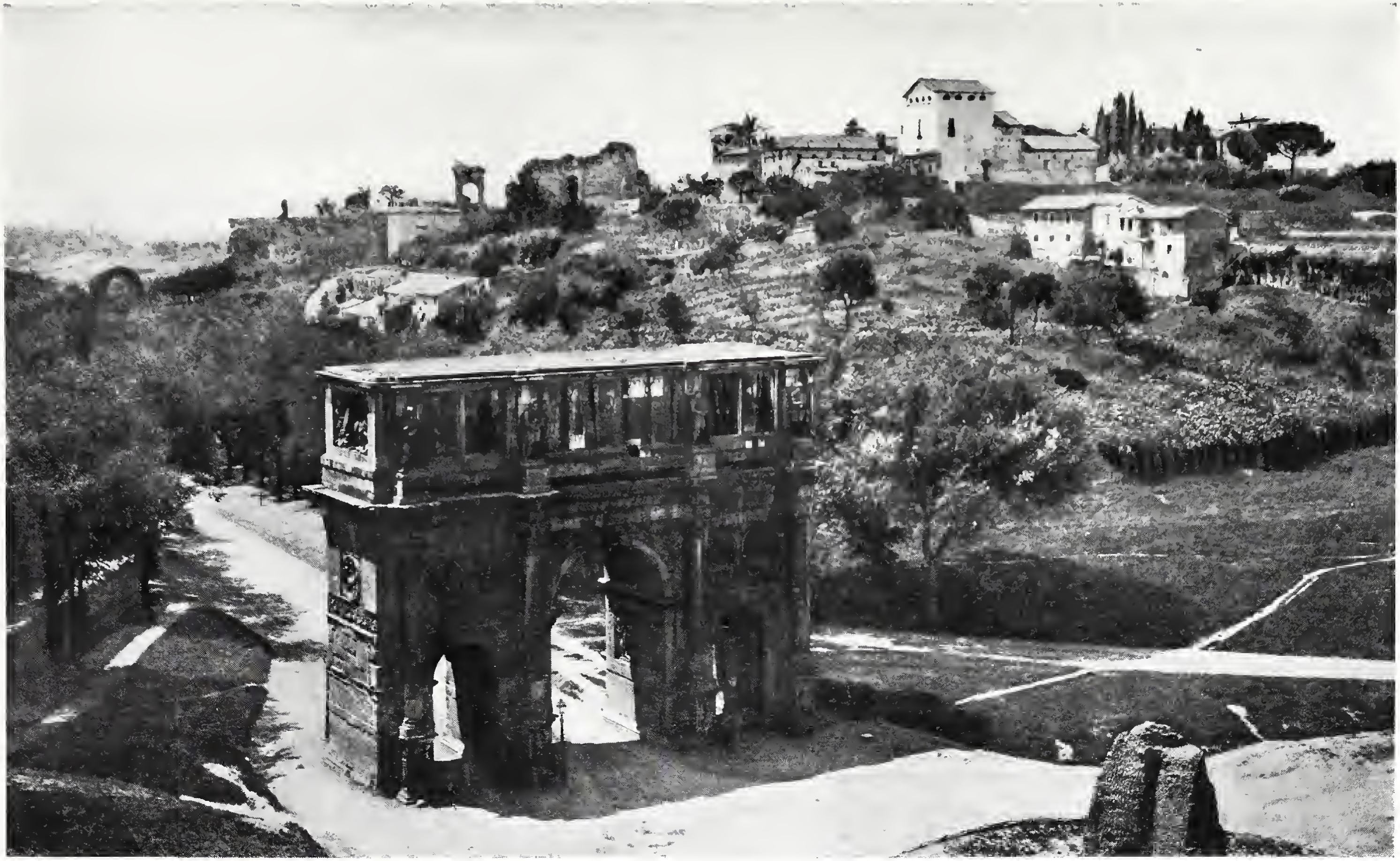
RESTORATION BY VALADIER OF THE CORNICE OF THE TEMPLE OF VESPASIAN AND TITUS, ROME. FROM THE ORIGINAL IN THE TABULARIUM.

GENERAL VIEW OF THE BATHS OF CARACALLA, ROME.

ciated because we are such fools as to be guided in our artistic preferences by a name? I think not. The Paris original possesses an intrinsic value which the London copy lacks. The absoluteness of this value continues none the less to exist, even if it be mistaken by critics who happen to have gone astray. The value of an original lies in the fact that it communicates to us directly the conception—the impression of joy—of the creator; whereas in a copy the impression is almost necessarily blunted by transmission through another hand.

I have often heard architects, in speaking of some *projet,* use the phrase, "great fun." In fact, the words have almost become current architectural slang. They are vastly significant. They express simply, and without pretension, that joy which is equaled by no other, the joy of creative work. The element of joyousness is thus not altogether lacking in our modern architecture. It is to be regretted that it does not more often extend downward from the architect to his office force, and that it is frequently crushed out entirely by the combined forces of steam heat, plumbing, and labor unions.

There remains, it is true, a deep mystery in Roman architecture. If we grant that it is lacking in the spirit of joyousness, and that joy is the essence of great art, how are we to explain the admiration, the adulation, that for centuries has been heaped upon the Roman style? It is necessary, first of all, to concede that it is no new thing for artists, and even for critics, to mistake a crow for a swan. The vogue of the eclectic painters, whose art is so closely akin to that of ancient Rome, lasted until yesterday. Perhaps we have already touched upon the inner essence of the matter in discussing the relative values of original and copy, and the necessary inferiority of the latter. Roman art is a copy, a free copy with variations, but still a copy. For long centuries the original remained unknown. It was unsuspected that Roman architecture was a copy. Men praised it for a beauty it possessed only at second hand. Winckelmann set the modern world upon the track of discovering the original. When Greek



ARCH OF CONSTANTINE
AND THE PALATINE, ROME.

architecture had once been brought to light, the inferiority of the Roman replica became manifest. It was at once clear to architects, critics and public alike (at least in America) that the spirit of joy, of enthusiasm, of poetry was present in Greek work, and that Roman architecture possessed these qualities only by reflection. There ensued the Greek revival. However, a little knowledge proved a dangerous thing; modern architecture imitated from the imperfectly comprehended Greek was seen to be less successful than that inspired by the more tangible Roman style. Hence the profession sought to reinstate the sadly shattered idol on her paper throne.

Furthermore, in accounting for the popularity of Roman architecture, we must constantly bear in mind that the art exists only in imagination. Each person has had to reconstruct his own visual image of the appearance of the buildings. Former centuries did not possess our prosaic archeological information. Inspired by the beauty of the ruins, a Piranesi might imagine Roman art fired with an originality, a joyousness, which the Romans never knew. Many architects, notably our own Thomas Jefferson, have done precisely this. Thus the shade of Rome was shrouded with a phantom glory.

From what has been said, I think, it will be evident that I must continue to differ from Professor Hamlin on the question of Roman art. What I felt instinctively, intuitively, as a boy, has been confirmed by the most careful study and thought of which I am capable. I believe, and I believe deeply, in Greek, Romanesque and Gothic. I believe in the Italian Quattrocento, and the American Colonial, even in the Barocco, if you will; but I refuse to bow down before the Goddess Rome.

BATHS OF CARACALLA, ROME.

LATROBE'S DESIGNS FOR THE CATHEDRAL OF BALTIMORE

BY FISKE KIMBALL

Part II

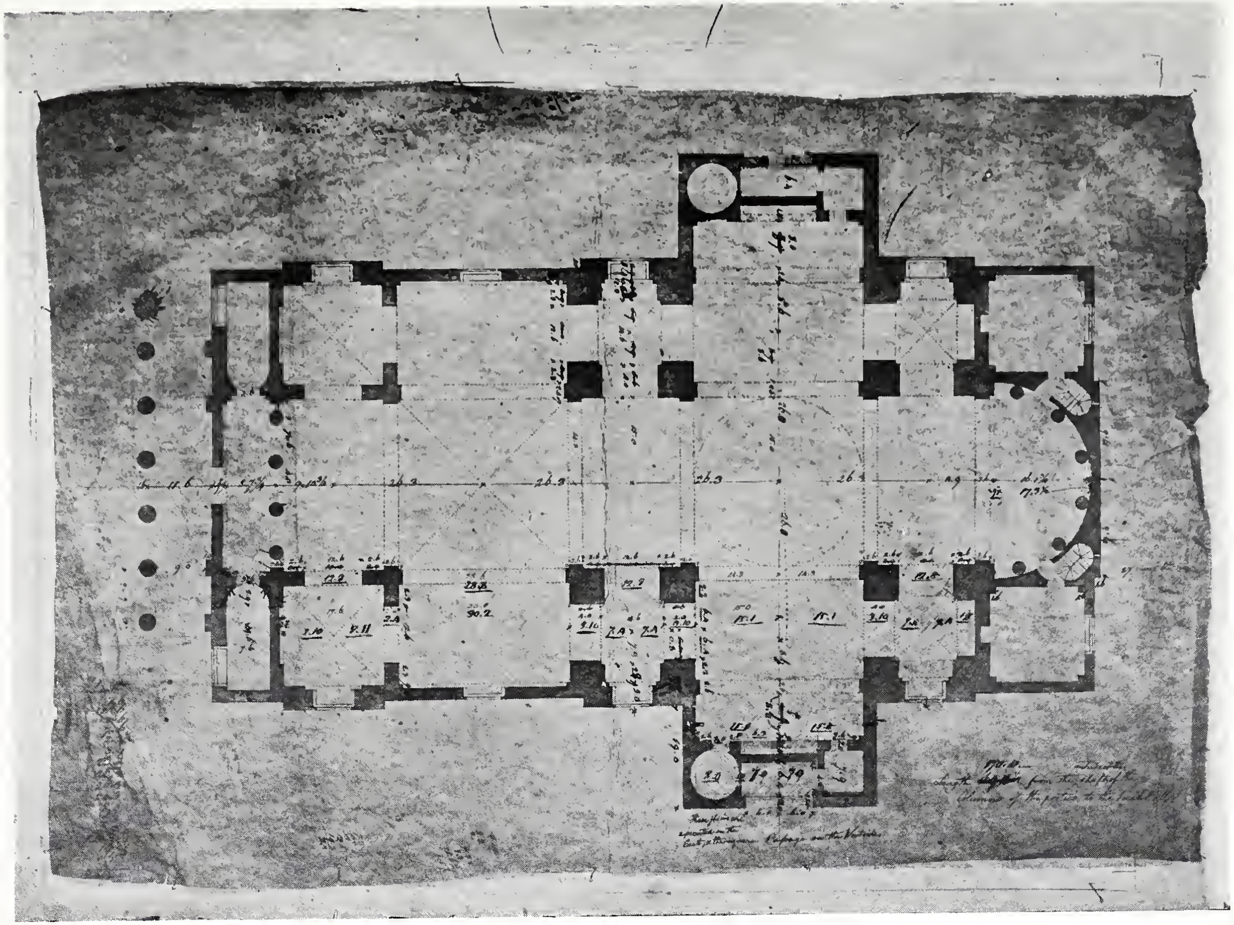
OF the two designs which Latrobe first submitted for the Baltimore Cathedral, the Roman one involved a far less radical break with Colonial academic traditions than the Gothic, and proved to be the one that was favored. Although the architect had determined what he felt to be the minimum size for the choir, and had made the rest of the church dependent upon this, the authorities felt it to be too expensive. Accordingly on July 9 Latrobe submitted a reduced design (III), which, he stated, "retains also the form of a Latin cross, has a dome, and is so contrived that the porticoes, and indeed the internal columns, may be the work of a future day." In response to Bishop Carroll's suggestion, he adds, "the circular form of the end of the choir has been adopted." The design thus described must have been not wholly dissimilar from the later one (V), according to which the execution was commenced, but was considerably smaller, with the internal height of the dome only thirty-six feet five inches. The authorities were willing to go beyond this. A similar scheme (IV) with somewhat greater dimensions, still retaining porticoes on the transepts, was unanimously adopted before the close of 1805.

All the designs so far had provided for seating all the worshipers in the nave, with very narrow aisles intended merely as passages which should preserve the canonical form of the church. Influenced perhaps by the wide-aisled Colonial churches which they knew, the Trustees desired the enlargement of the side aisles by ten feet. This demand, as Latrobe wrote, "involved the principle of his design," and to satisfy it and yet secure the other necessary relationships he had to ask for some extension in length also. On the Bishop's request, the porticoes of the flank were dispensed with, and the transepts extended as far as these had projected. With the resulting design (V) Latrobe expressed himself satisfied, the Trustees acquiesced in his changes, and he finished the first of the working drawings in March, 1806.

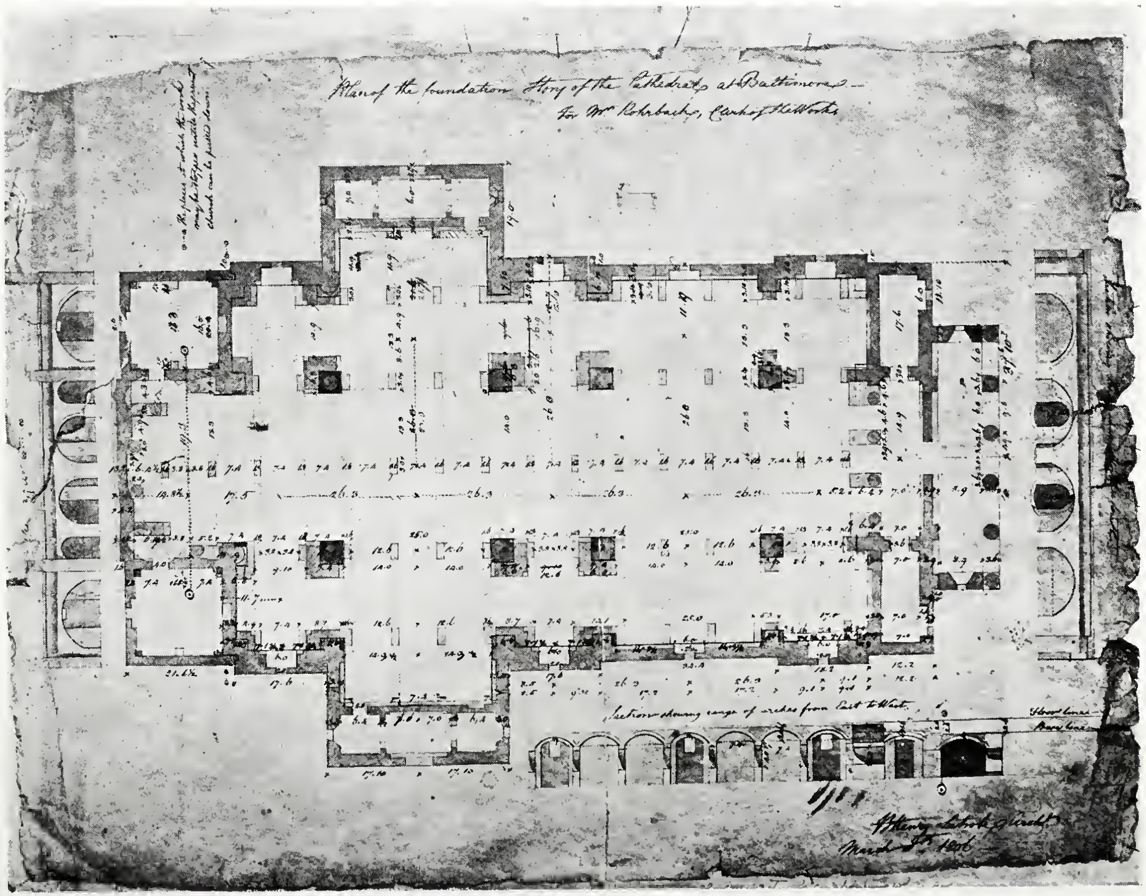
The scheme of this design is fundamentally different from the first Roman scheme, and has its own merits. There is no longer any suggestion of the Greek cross. The whole is essentially a rectangular mass with a nave of alternating bays, three narrow and two wide, having one of the wide bays slightly extended to form the transept. The crossing is no greater in diameter than the groined vault of the large nave bay, but it is accentuated by a dome. The tallness and smallness of this dome in relation to the exterior Latrobe sought to remedy by an outer section much flatter and broader, although this led him into Soufflot's difficulty, that there was no satisfactory bearing for the outer wall of the drum. The effort to eliminate interior columns, which had formerly been used to decrease the span of the arches in the nave, forced the adoption of segmental arches and vaults. This greatly reduced the lunettes, so that windows were introduced into the aisle walls. The floor of the church was raised five steps above that of the portico, to keep the exterior columns in proportion to the height of the attic. In spite of Latrobe's efforts, the design, especially on the interior, had become more Renaissance than classical.

The execution of the design was no sooner begun, under the supervision of Rohrbach, a Baltimore builder who had been selected with Latrobe's consent as clerk of the works, when difficulties were created which forced Latrobe to fight for the preservation of the plan. Although the building committee and the Trustees had agreed that no alterations should be made without the architect's consent, many were made in the foundations during his absence, by Rohrbach, acting under the personal orders of John Hillen, the chairman of the committee. In truth both Rohrbach and Hillen were little prepared either to understand or to sympathize with Latrobe's intentions. The German Lutheran church in Baltimore, then under construction from Rohrbach's design, which gives some measure of his architectural knowledge, is of a vernacular Gothic or Romanesque character with corbeled cornices and pointed arches having square jambs. The vaulted crypt shown in Latrobe's drawing of the foundations was so far beyond his ideas that he looked at the sections of it upside down and supposed it a foundation of inverted arches. The masonry vaulting of the church itself, unprecedented in America, was looked upon as chimerical, and Rohrbach with Hillen's support carelessly altered Latrobe's drawings and circulated a plan of his own. In spite of strict mandates from the Trustees, these unauthorized actions continued so that Latrobe was three times forced to demand his drawings and withdraw from the work. The Bishop's support of him, however, finally insured Rohrbach's subordination, and Hillen in March, 1807, resigned his chairmanship. The modifications in the foundations necessitated a somewhat revised plan (VI), agreeing as well as possible with the work already executed. Even then the committee insisted on a reduction in the height of the crypt, dropping the floor of the church to the level of the floor of the portico. This, as Latrobe warned them, destroyed the relation between the external order and the attic. "But," he wrote philosophically, "notwithstanding, let the alteration be made. I will devote the necessary time to a new design, and hope it shall succeed. I do not see how at present, but the resources of art are infinite." The only solution, as he foresaw, was "to place the principal cornice at the height of the building," thus producing "as handsome a front as could be desired." This step, from which he had been hitherto deterred only by the expense, he was now forced to take, producing the exterior shown in the first perspective drawing. He abandoned the lunettes, and also eliminated the false bearing of the large saucer dome of his fifth scheme, securing sufficient importance for a smaller dome by raising it on a peristylar drum. On a perspective drawing of this beautiful design he lavished all the resources of finished draftsmanship, doubtless in the hope of arresting the imagination of his clients and fixing it finally on this one scheme.

A single practical difficulty only remained, and although it was not of his making, Latrobe was not satisfied until it was removed. The widening of the aisles at the instance of the Trustees had made them of consequence in the room of the church, and the piers were thus too big. When it came time to furnish the working sections Latrobe attempted to correct this. In an ingenious scheme drawn over the abandoned basement plan of the fifth design, he tried the experiment of substituting columns for all the piers. This scheme, reducing the church to a vaulted basilica with alternating bays, like San Salvatore in Venice, seems not to have wholly pleased him, for he turned to an alternative expedient of getting rid entirely of the four centre piers of the church. This he accomplished by returning to the principle of his first Roman design, making the rotunda at the crossing as wide as both nave and aisles together, with the aisles opening into it diagonally. The wider aisles now gave the scheme more the proportions of the similar arrangement in the plan of St. Paul's. The greater diameter given to the crossing also permitted a return to the saucer dome of Roman proportions both inside and out, now descending on adequate bearings. This final solution (VII), which Latrobe embodied in a new rendered section and perspective, was the consummation of his wishes so far as past restrictions permitted them to be realized. Although reducing the size of the choir, it gave the church a central feature of Roman character and monumental scale, which has continued to dominate the church in spite of successive enlargements of the sanctuary.

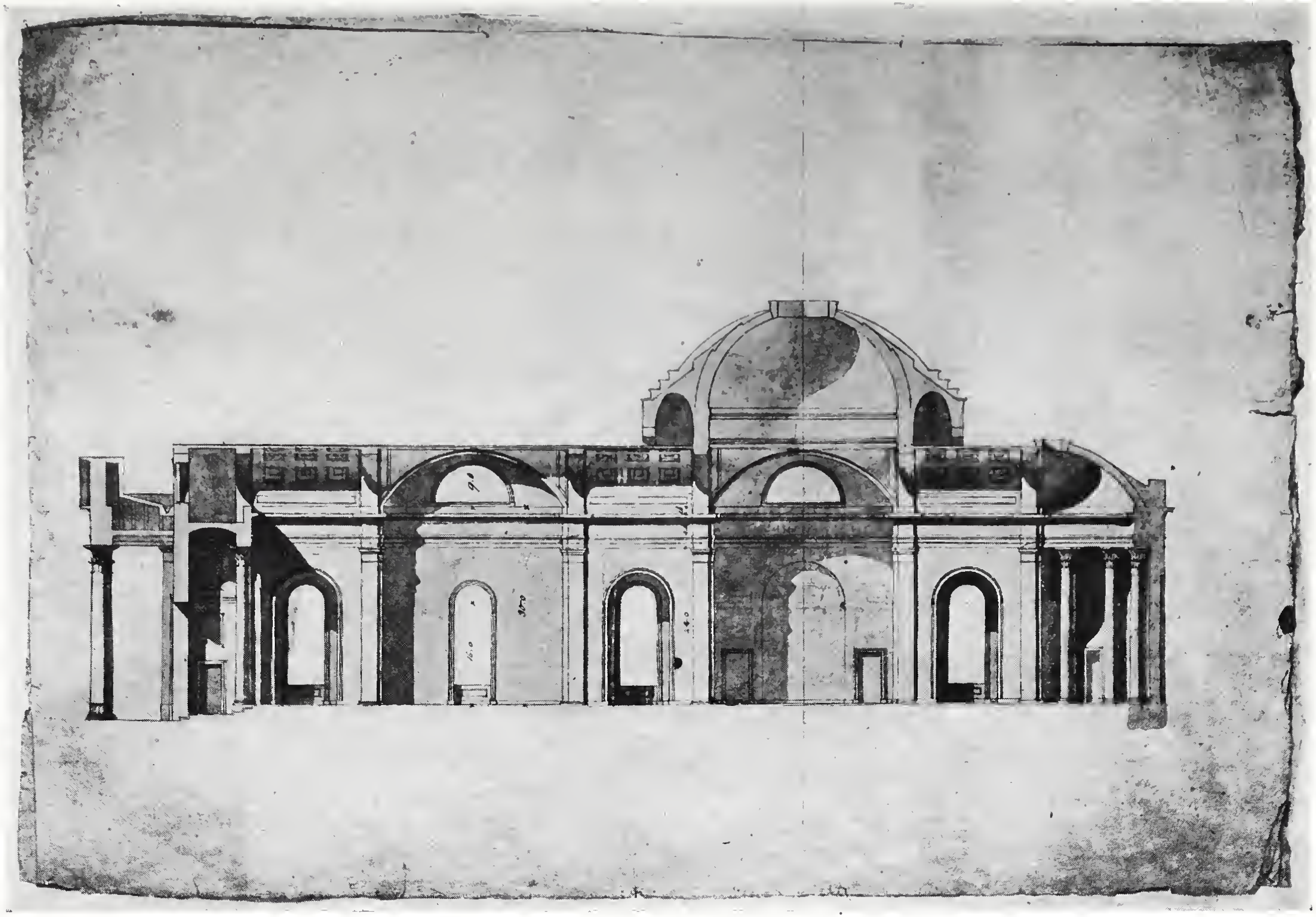


PLAN OF LATROBE'S DESIGN ON WHICH THE EXECUTION WAS COMMENCED (V). A FAINT LINE MARKS THE POSITION OF THE ENLARGED ROTUNDA IN DESIGN (VII).

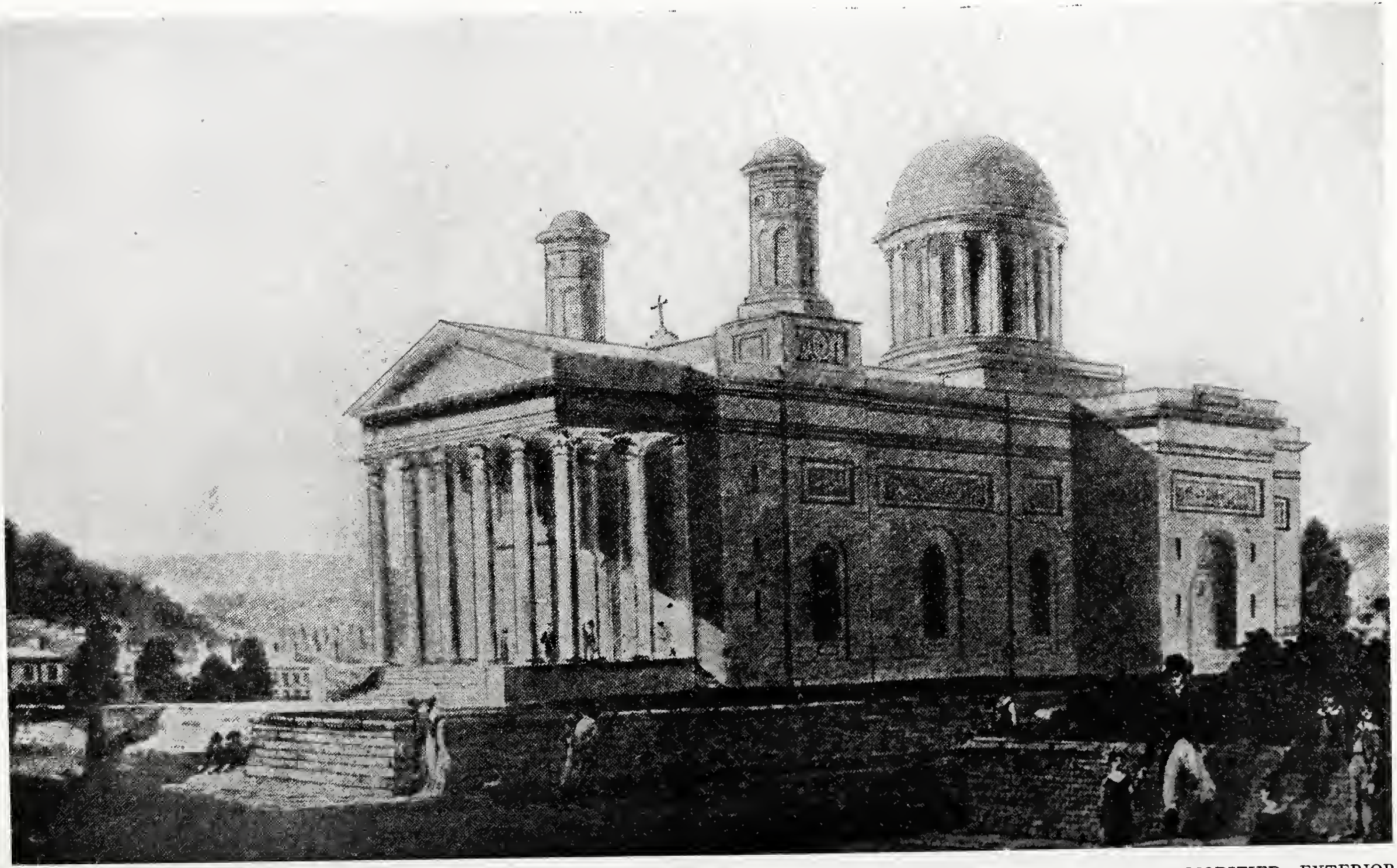


Plan of the foundation Story of the Cathedral at Baltimore —
For Mr Rohrbach, Clerk of the Works
Section showing range of arches from East to West
Floor line
Base line
B Henry Latrobe Archt
March 5th 1806

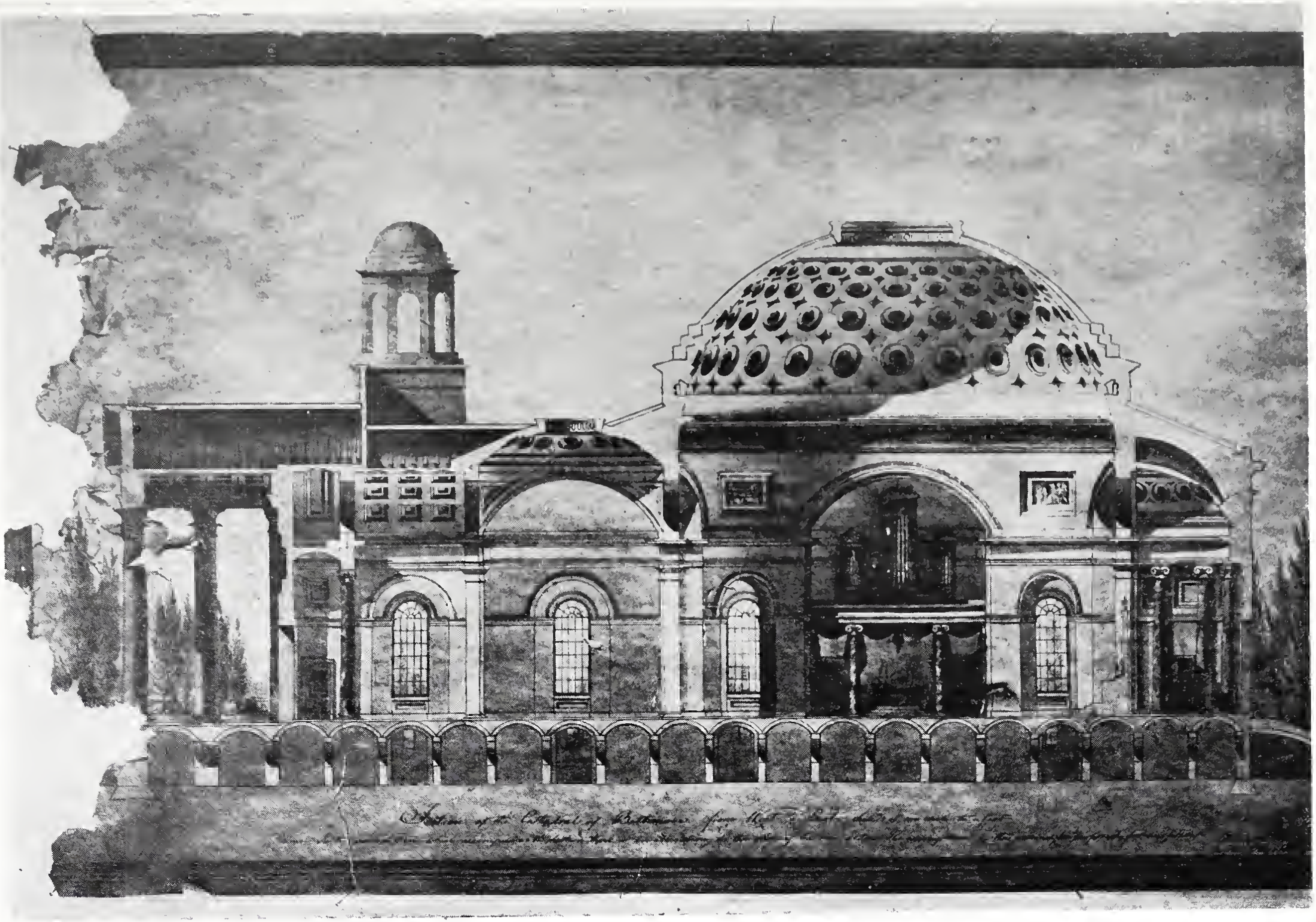
PLAN OF THE FOUNDATION ON WHICH THE EXECUTION WAS COMMENCED (V). OVER IT IS DRAWN A STUDY FOR SUBSTITUTING COLUMNS FOR THE PIERS OF THE UPPER CHURCH.



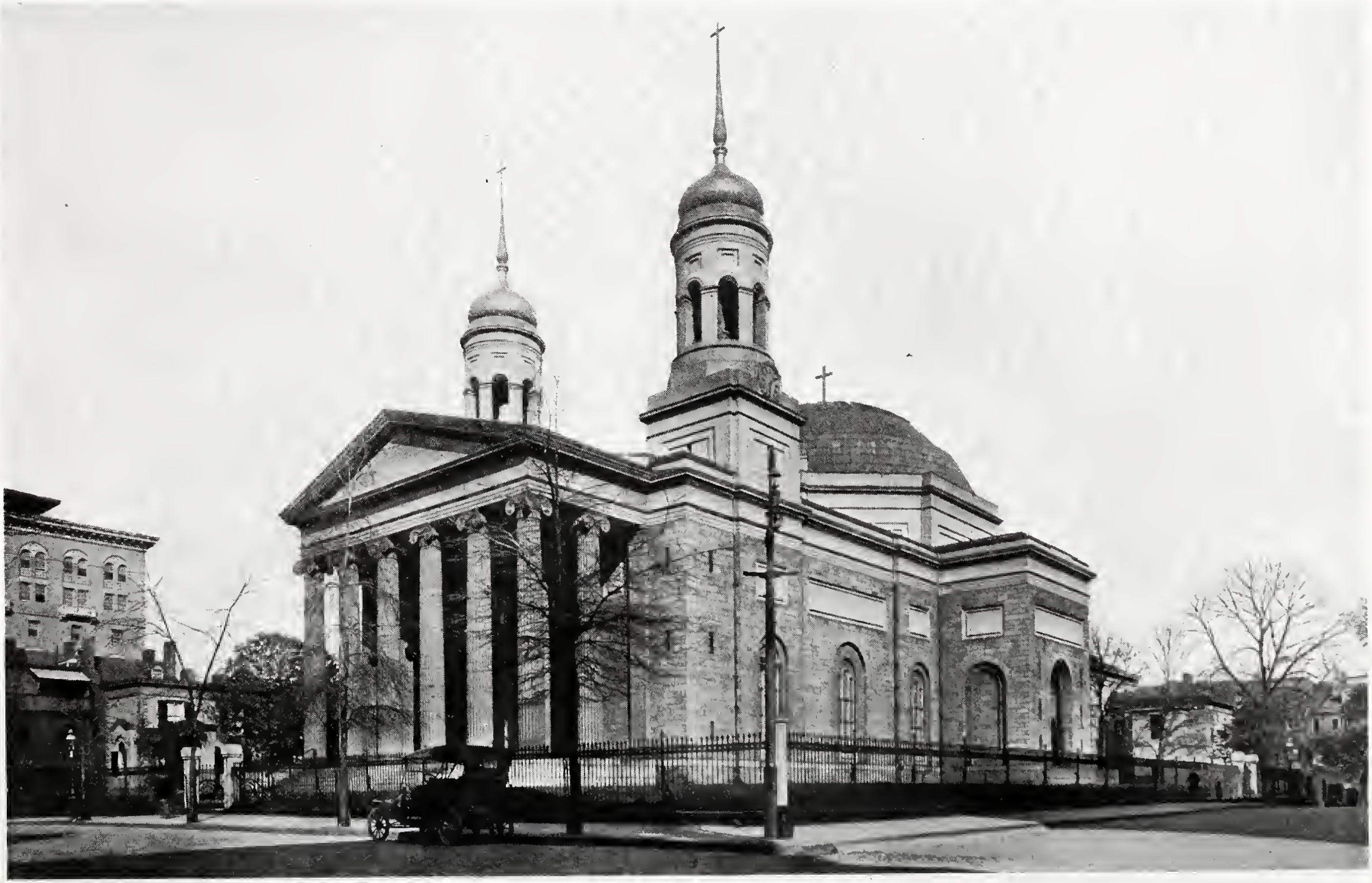
SECTION OF LATROBE'S DESIGN ON WHICH
THE EXECUTION WAS COMMENCED (V).



THE MODIFIED EXTERIOR
OF LATROBE'S DESIGN (VI).



SECTION OF LATROBE'S
FINAL DESIGN (VII).



EXTERIOR OF THE CATHEDRAL AS IT STANDS TODAY. THE TERMINATIONS OF THE TOWERS ARE UNFORTUNATE ADDITIONS TO THE ORIGINAL DESIGN.

From the adoption of this scheme in March, 1808, work on the cathedral went happily forward. In spite of an interruption from 1811 to 1817, caused by war conditions, it progressed so that in 1818, before Latrobe's departure for New Orleans, he had the satisfaction of seeing his great work entirely covered in, and the belfries under construction. On May 31, 1821, the cathedral was dedicated. The portico, to be sure, was not added until the seventies, when John H. B. Latrobe, the son of the architect, supplied details conforming to the Ionic order of the north porch of the Erechtheum. Already before 1832 the unfortunate turnip-shaped roofs had been added to the belfries, so strikingly incongruous with Latrobe's design. To accommodate the increasing numbers of clergy at great festivals, the church has been twice lengthened toward the east, in 1879 and 1890. As the nave bays have thus been duplicated in the choir the result is merely to supplement and enhance the original scheme.

As it stands today, the cathedral, in spite of the belfry roofs and the somewhat meritricious decoration of the interior, may well command respect, judged by any standards. The frankness and impressiveness of its paneled granite walls—reminiscent, in their absence of columnar decoration, of Chalgrin and the Arc de l'Etoile—are an object lesson in *architecture raisonné*. The interior affords an equally valuable lesson in the composition of spatial forms. The great central rotunda has a majesty truly Roman. Thus, although a hundred years have passed since its building, the patriarchal cathedral still remains without question the finest classical church in America.

That the founders well knew the boon conferred on them by the skill and artistry of their architect, is witnessed by their letter to Latrobe on his final departure from Baltimore in 1820, a unique testimonial which many an architect might envy:

"Under the blessing of Divine Providence," they write, "this magnificent building, the design and plan of which are entirely yours, is fast approaching completion, and bids fair to stand for ages as a monument, not only to the piety of those who have contributed to its construction, but likewise to your genius and architectural skill and taste, for having availed themselves of which, the Trustees consider themselves singularly fortunate. The Trustees perform a pleasing duty, in bearing testimony to the accuracy of your estimates of expense, whenever they were called for, and they look back with great satisfaction to the harmony and good understanding which has ever subsisted between you and themselves. It is true that objections were sometimes made to parts of your plans, the propriety and connection of which their inexperience did not permit them at the time to discern clearly; but now that the various details of the building form one grand and beautiful whole, they are fully convinced of the propriety of having on such occasions given way to your greater experience and better judgment. Rest assured, Sir, that the Trustees will ever cherish the memory of your distinguished services, and in taking leave of you, which they do with the utmost regret, they will indulge the hope that your great abilities will meet with the encouragement to which they are so eminently entitled, and they fervently pray the Almighty Being, to whom you have erected the most splendid temple, on this side of the Atlantic, to take you under his special protection."

ARCHITECTVRAL WALL PAINTING

By Charles H. Moore

A THEORY has prevailed in very modern times that painting on walls for architectural embellishment should have a different character from that which belongs to what we commonly understand by picture painting. It is thought that the ornamental purpose of a wall painting and the conditions under which it must be seen require that it should differ fundamentally from an easel picture enclosed within a frame and viewed independently under favorable light.

The most distinguished exponent of this theory was the late Eugène Viollet le Duc, who, in the article *Peinture,* in his *Dictionnaire Raisonné de L'Architecture Française,* maintains that in order to secure the relationship that should exist between architecture and any painting with which it may be adorned, the painting must conform to and emphasize the structural forms and have a conventional character wholly different from that of purely pictorial painting. Picture painting and wall painting, he tells us, should proceed on different lines and reach different results. A picture, according to him, is a representation of a scene, with light falling in one direction and with unity of effect. To view such a picture from any other than the true station point is, he thinks, painful to a sensitive eye. The primary function of an easel picture is, he affirms, to produce optical illusion, which is incompatible with the ends of monumental painting on walls. Therefore, he tells us, the most brilliant epochs of art admitted no such enormities as those of pictures with their horizons above the eye and their perspective centres possibly far to the right or left of it.

In support of this view the author cites historic examples and affirms that the further we go back in the history of the art the closer relations do we find between architecture and any ornamental painting on its walls, arising from conformity of the painting with the structural forms, and from the absence of developed pictorial qualities. He reminds us that in France during the Middle Ages, such wall painting as there was retained the character of the more ancient art, and thus fulfilled the conditions that he thinks essential to effective ornament. He observes, however, that the Byzantine mosaics, so freely employed in the early medieval monuments of Italy, are not always in accord with the architectural forms; and on this account, as well as because of what he considers an objectionable metallic quality, he characterizes them as barbaric. It is certain, he remarks, that the Greeks of antiquity, though they held color decoration to be necessary to architecture, were too appreciative of form to admit such works in their monuments. Save in these mosaics the color decoration of walls did not, he affirms, lose the conventional character that he considers essential, until the time of the Italian Renaissance, when isolated pictures, painted in the studio, were substituted for paintings directly on the walls.

In discussing further what he considers the proper difference between wall painting and independent picture painting, he maintains that those peoples who are commonly thought to be the finest colorists—as the Venetians and the Flemings—are not colorists in the sense that the Chinese, the Japanese and the Persians are colorists. To give an effect of reality in a picture by delicate half-tones, as in the works of Titian or of Rembrandt, and to make a shawl of Tibet which pleases the eye by nothing more than an harmonious combination of flat colors, requires, he thinks, two very different operations of mind.

This argument, it appears to me, proceeds on a mistaken notion. It rests on a misconception of what it is that gives ornamental value to wall painting, on the one hand, and ignores, on the other hand, the ornamental quality that underlies even the most realistic art, if it be art at all. What may be called the fundamental qualities of color design are common to painting in all its forms. While there is, indeed, a great difference between a painting by Titian and the abstract color composition of an Eastern fabric, there is not such a difference as to justify the affirmation that they proceed on different lines and have nothing in common. A little consideration will show, I think, that the art of Titian is but a development of that of the Eastern weaver. For the abstract color patches of the fabric may give place to suggestions of the figures of men and animals, and the historic development of figure painting, from that of the most primitive art to that of Titian, consists in little more than giving to the grotesque symbolism of the ancient composer a more natural character, by improved delineation, by the addition of tones and gradations that suggest relief, and by the introduction of groupings in receding planes with gradually perfecting perspective. The distinguished writer whose theory we are considering has failed to perceive the essential oneness of all painting, whether on the walls of buildings or on isolated panels or canvases. Thus the fact that suitable conventions in all forms of art take care of themselves when the artist works without sophistication has escaped him, and he does not see that no vital art is the outcome of a theory.

In order to reach a clear understanding of the true principles of wall painting it will be well to consider (1) what constitutes the ornamental value of such painting and to what extent naturalism may be consistent with it; (2) how far pictorial art unconnected with architecture should have an ornamental quality; (3) how far historic monuments justify the notion that wall painting must be essentially different from other painting; and (4) what line of distinction can be drawn between ornamental wall painting and painting that is primarily pictorial in motive.

I.

In order that painting may have value as ornament it must present a broadly effective color harmony; it can admit nothing inconsistent with this. But all color composition is of necessity based on form of some kind. Even Viollet le Duc's shawl of Tibet has its color patches proportioned and limited by some sort of outlines, and the ornamental painting of more cultivated peoples—as that of the medieval French illuminators—is on a foundation of beautiful linear composition, which is essential to the total effect of the color scheme, since this depends on the magnitude and location of every patch and speck of color, and these are fixed by the lines. In such art the eye is charmed by beauty of line and color apart from any representative character or suggestion that may be included; and this I conceive to be what constitutes the ornamental quality of painting.

But ornamental painting need not be exclusively of this very abstract character. It may admit a considerable amount of pictorial naturalism. Even perspective and chiaroscuro are quite compatible with ornamental effectiveness, so long as the principle of form and color harmony is kept dominant. There is no ground for Viollet le Duc's affirmation that a picture can be viewed with comfort from no other than its exact perspective station point. A picture is rarely seen from precisely this point, and it may be viewed from many points far distant from it without material disadvantage. The eye makes large allowance in this matter, and it would puzzle the average beholder to find the true station point from which the perspective of almost any given composition was determined. Moreover, few, if any, great works of art are rigorously correct in perspective. Considered as ornament, what we regard in wall painting is not verisimilitude, but, as already remarked, the broad division of the surface into proportioned spaces of harmonious color on a beautiful linear basis. On this foundation it is hard to fix a limit to the degree of naturalism that may be allowed.

II.

What we commonly understand by pictorial art—art not associated with architecture—is not properly mere imitation of nature with a view to illusion, though the idea that it is so has widely prevailed in times of technical advancement in the means of imitation, both ancient and modern. It was not unnatural that such an idea should arise in the popular mind after painting had become dissociated from architecture, and skill enough to make illusive suggestion possible had been attained. But so long as the art was mainly confined to wall surfaces and the embellishment of small objects, including the pages of hand-written books, naturalism was not developed to an extent that could give rise to illusive imitation. With the advent of the easel picture, however, the idea of likeness to nature was strengthened and at length became so engrossing that the ornamental principle was lost sight of. This condition is indicated by the remarks of ancient writers about likeness to nature in the works of their great artists, as in the story of the horse neighing at a picture of a horse by Apelles.

In modern times this idea of nature began to be strongly manifest in the sixteenth century, and the writings of Vasari abound in indications of it. Vasari's estimates of works of art are, as every reader of his writings is aware, largely based on the notion that lifelikeness constitutes the chief merit of painting; and he finds little to commend in the works of early masters, save where he thinks they show some degree of developing naturalism. His conception of pictorial excellence is fairly set forth in the following remarks on the so-called Mona Lisa of Leonardo da Vinci:

"Whoever shall desire to see how far art can imitate nature may do so to perfection in this head, wherein every particular that could be depicted by the utmost subtlety of the pencil has been faithfully reproduced. The eyes have the lustrous brightness and moisture which are seen in life, and around them are those pale red and slightly livid circles, also proper to nature, with the lashes, which can only be copied as they are with the greatest difficulty. The eyebrows are also represented with closest exactitude, where fuller and where more thinly set, with the separate hairs delineated as they issue from the skin, every turn being followed, and all the pores exhibited in a manner that could not be more natural than it is; the nose, with its beautiful and delicately roseate nostrils, might be easily believed to be alive; the mouth, admirable in its outline, has the lips uniting the rose tints of their color with that of the face in the utmost perfection, and the carnations of the cheeks do not appear to be painted, but truly of flesh and blood: he who looks earnestly at the pit of the throat cannot but believe that he sees the beating of the pulses, and it may be truly said that this work is painted in a manner well calculated to make the boldest master tremble, and astonishes all who behold it, however well accustomed to the marvels of art."*

This is, of course, gross exaggeration. No such ridiculous elaboration will be found in the picture, highly finished in detail though it is. But the remarks give the measure of Vasari's notions of pictorial merit.

The same ideas had prevailed, as I have said, in the times of later Greek and Greco-Roman art, and found expression in the writings of Vitruvius and of Pliny; from whom, no doubt, Vasari largely drew his ideas. Most modern writers also have based their judgments on the same ideas. The more recent among them employ new phrases, as "tactile values" and "space composition," but the meaning is the same. Such people forget that representation of nature does not constitute a work of art and that optical illusion is not the aim of a great artist. The great artist does not strive to trick the eye, but to illustrate beauty through the natural conventions of art. He appeals to the imagination by truthful suggestion; but with whatever degree of naturalism he may clothe his idea, his primary object is to produce a harmony of form and color. The most naturalistic work of a true art-

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***Lives of the Most Eminent Painters, Sculptors and Architects.* By Giorgio Vasari. Translated by Mrs. Foster, London: 1876, vol. II, p. 384.

ist has thus an ornamental value apart from any idea of representation that may be included.

III.

The notion that wall painting should be essentially different from other painting finds no support in the art of the past. It is true, indeed, that a great deal of ancient painting on walls was very conventional and consisted only of childlike outline and flat color with no perspective and nothing of what we understand by pictorial composition. But that this character was not given from any theory that wall painting should be different from other painting is shown by the fact that all other painting of the time had the same character. The wall paintings of the tombs and temples of the Nile and the paintings on papyrus rolls and mummy cases are identical. The conventions of ancient Egyptian wall painting were thus, it appears, due to the undeveloped state of the art at the time and not to any notion that they were particularly appropriate to painting on walls.

We know nothing from extant remains of wall painting among the Greeks in the best time of their artistic culture; but of Greco-Roman wall painting—which without doubt reflects, though imperfectly, the lost art of Greece—we have abundant knowledge from existing examples. These, of which there are many in excellent condition, answer to the account given by Pliny, who speaks of the decoration of walls in the time of Augustus, "with representations of villas, harbors, landscape gardens, sacred groves, woods, hills, fishponds, straits, streams, and shores."* The rich collection of such paintings, preserved in the Naples Museum, shows that a remarkable degree of naturalism was common in them. Although by inferior workmen, often faulty in drawing and always coarse in execution, these works exhibit advanced qualities, including perspective and chiaroscuro of very modern appearance. But there is no difference between the wall paintings and the easel pictures, both of which are numerous in the collection.

Coming now to the Middle Ages, we find that in France and elsewhere wall painting was more archaic in manner than that of ancient Rome. With the breaking up of the old civilization the ancient skill in the arts was lost, and on the medieval revival a fresh start had to be made, with such help as could be got from tradition as embodied in the Byzantine manuscript illuminations and small ivory carvings that were widely circulated in the monastic libraries of Western Europe.

Little of the French medieval wall painting survives, however, and in the Ile de France—where the finest art of the Middle Ages was produced—there is almost none at all. But such mutilated fragments as may be found, as in the wall arcades of the Ste. Chapelle of Paris, make it clear that it had the same character as the contemporaneous manuscript illuminations, of which great numbers are preserved. This miniature painting, on the pages of missals and other books, has no perspective save such as belongs to the most childlike attempts at foreshortening. Forms are described by firm outlines in black or dark brown, colors are laid in nearly flat fields, though there is some suggestion of modeling. Cheeks are rouged, lips are reddened, eyes and hair are colored. But there is no expression of light coming from one direction. Lights and shades may occur equally on both sides of an object. Backgrounds are mostly flat—either of color or of gold—and while symbolic representations of architecture and furniture occur, neither these nor the human and animal figures have any ground to stand on. Thus wall painting and other painting were alike in France during the Middle Ages.

The most important wall painting in the history of art is that of Italy from the fourteenth to the sixteenth centuries; but this painting, even from its beginnings, has a distinctly pictorial as well as an ornamental motive. The frescoes of Giotto and of Lorenzetti do not at all conform to the theory of Viollet le Duc. They have little of the flatness and sym-

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The Elder Pliny's Chapters on the History of Art. Translated by K. Jex-Blake, p. 147.

bolic abstraction of the earlier French work supposed by him to be essential to architectural effectiveness. Giotto's figures are as natural as he could make them. They are grouped in receding planes; they are modeled with great fullness; there is much freedom of action and of foreshortening, and they have ground under their feet, with landscape and architectural backgrounds in the best perspective that the early master could manage. Each composition is a complete picture, though it is harmoniously related to the general ornamental scheme of the series to which it may belong. That these frescoes are architecturally effective is not because of any avoidance of pictorial development, but because they are founded on those broad principles of harmony in form and color that constitute, as I have said, the ornamental quality of painting. Therefore they illuminate the walls of the churches and cloisters where they occur, just as the works of the French ornamenter illuminate the pages of a missal. And the frescoes of Giotto on the walls differ not at all in pictorial character from his panel pictures in tempera.

The progress of Italian wall painting, from Giotto to Raphael, exhibits a steady advance in natural pictorial development; and at every step of this advance it corresponds entirely with all other Italian painting of its time. There is no difference at all between a fresco on a wall and a panel picture on an altar, in so far as concerns the principles on which they are respectively composed. Compare the frescoes of Michael Angelo on the vault of the Sistine with the Holy Family by the same master in the gallery of the Uffizi; or compare the frescoes of Raphael in the Vatican chambers with the Saint Cecilia by him in the gallery of Bologna. In such wall compositions as the School of Athens and the Expulsion of Heliodorus, Raphael has done all that he could, by means of perspective and chiaroscuro, to give relief to his figure groups and retirement to his architectural vistas. Thus, before the resort to pictures painted in the studio, as substitutes for painting directly on the walls, we find that same development of pictorial qualities in wall decoration which Viollet le Duc attributes to the studio pictures.

It is thus clear that no support for the notion that wall painting should be different from other painting can be drawn from the art of the past; and there is therefore no historic ground for the theory that wall painting and picture painting proceed on different lines and involve essentially different operations of mind.

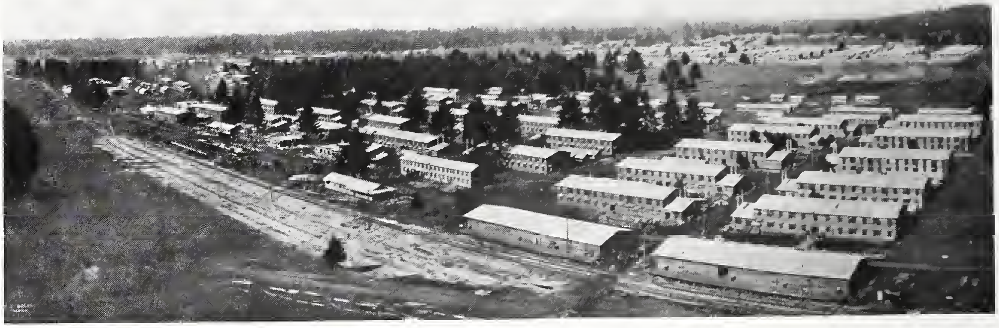
IV.

Does it follow, then, that there is no necessary difference between effective wall painting and other pictorial art? It appears to me that there is only this difference—namely, that in the one case what I have called the ornamental quality of painting is made to predominate, while in the other the pictorial element counts for more. Both must have ornamental value; but the wall painting fulfills its function primarily by its ornamental quality, while in the easel picture we look more for the suggestion of nature. It is hard to find any other difference, save that which results from the different materials employed—on which a word may be said.

Nearly all wall painting of ancient times and of the Middle Ages was executed in fresco, a process which has a peculiar fitness on architectural adornment, both on account of its durability and its quiet effect. The pigments available in fresco painting are for the most part ground earths that are comparatively dull, and therefore fresco painting does not lend itself to great brilliancy of coloring. Moreover, the colors in fresco, being mixed with water only, sink into the wet plaster on which they are laid and dry with a dead surface. They have thus a different effect from colors tempered with size or oil laid on a dry ground and afterwards varnished, as in tempera or oil painting. In fresco, too, since the plaster dries quickly, it is necessary for the artist to work with comparative speed; and as no retouching is possible after the ground is dry, any degree of elaborate finish requires great dexterity and is usually avoided.

The conventions of mosaic are radically different from those of any kind of painting proper. The small cubes of stone or glass of which the picture is made up cannot give the finer gradations and blendings that are readily attained with ground pigments laid on with the pencil; and although it is possible by the use of very fine tesserae to obtain somewhat fine transitions and interblendings, such refinements cannot approach those of the pencil and are destructive of the natural qualities of mosaic art. The best wall mosaics—the best because they bring out the proper qualities of the materials employed—are made up of measurably large stones, the smallest being rarely less than three-eighths of an inch in diameter, which have their effect as cubes even when the work is viewed from a considerable distance. The true mosaic worker seeks no refinements that are not compatible with a frank expression of the nature of stone inlay.

As for stained glass, which in the Middle Ages gave splendor to the great openings of Gothic churches, normal design in this material is a translucent kind of mosaic, with conventions even more severe than those of any other mode of color decoration. The fact that it must be seen by transmitted light differentiates it fundamentally. In its integrity it is composed of small bits of glass, each one of which is held in place by a frame of lead that gives a thick dark outline. There is nothing in good medieval glass that can be called painting, and such delineation as occurs is of the simplest and most conventional kind. Under these conditions it is obvious that pictorial qualities cannot be developed with any fullness. Only the most abstract and symbolic suggestions of things are possible without loss of that jewel-like splendor which is the distinctive quality of design in glass. The worker in stained glass who appreciates its qualities and ends does not seek to overstep its natural limitations. He perceives that the essential value of his art is a consequence of them, and that he cannot develop his compositions pictorially without doing violence to its principles.



BIRD'S-EYE VIEW OF PART OF CAMP LEWIS.

CAMP LEWIS
AMERICAN LAKE, WASH.

BY
CARL F. PILAT

CAMP LEWIS, at American Lake, Wash., is the largest of the cantonments built for the National Army. It lies on Puget Sound, about sixteen miles south of Tacoma. Comprising an area of nine square miles, containing 1,757 major buildings, with 422 minor structures, provided with all the essential public utilities of a municipality, and having a population of about 50,000 soldiers, it is the fourth largest city in the State, and was constructed in the remarkably short time of eight weeks.

This achievement is all the more noteworthy, when it is considered that Camp Lewis is but one of sixteen National Army cantonments, housing 35,000 to 50,000 men each, all of which were built in approximately the same period. The total construction cost of Camp Lewis was about $6,865,000, representing a per capita cost of less than $138 for the military population. Both in rapidity and in economy of construction, Camp Lewis is typical of the entire group of National Army cantonments built by the Government, as it is typical also of the sanitary and military arrangements of all the cantonments within the group.

At the moment when a state of war was declared to exist with Germany, it became necessary to undertake a tremendous volume of military construction work. The prosecution of this work fell partly to the Navy and other departments, but more especially to the War Department; and the provision of sixteen National Army cantonments and an equal number of National Guard mobilization camps, together with warehouses, embarkation depots, etc., was entrusted to the office of the Cantonment Construction Division of the Quartermaster's Corps in the War Department. This office, which is under the direction of General I. W. Littell, contains an Engineering Division, a Material Division, a Construction Division and an Accounting Division.

The Engineering Division prepared typical or standard plans for the cantonments, covering both engineering and building operations. Plans originating in this division were submitted by General Littell to the Committee on Emergency Construction of the Council of National Defense. The Material Division, in consultation with the various supply committees of the Munitions Board of the Council, placed contracts for materials, equipment, etc., and, in consultation with the Transportation Committee of the

Munitions Board, worked out the transportation requirements connected with the construction of the several cantonments. The Construction Division had immediate charge of operations in the field; and the Accounting Division handled both the accounts of the Office of Cantonment Construction and the accounts of the individual contractors on cantonment work.

Construction contracts were let, not on the usual competitive basis, but on a percentage of cost basis. The contractors, it will be seen, were relieved of a large share of the responsibilities and duties incident to the customary operating contract; and were in a position to give undivided attention to such problems as the employment and management of labor, the timely assembling of materials, the prompt unloading of cars and the like.

The work of each cantonment was under the immediate charge of a constructing quartermaster. The constructing quartermaster at Camp Lewis was Major Stone, who had two civilian advisers, W. J. Roberts, who acted as chief engineer of water and sewers, and the writer, who acted as cantonment planner and consulting engineer.

The presence of the two civilian advisers on Major Stone's staff may perhaps require a word of explanation. Upon the passage of the bill creating the new National Army, it was apparent that many large camps must be built; and a number of members of the National Conference on City Planning and of the American Society of Landscape Architects promptly offered their services in selecting and laying out the sites of the camps. The offer was made to the Federal Government through the Council of National Defense, the spokesman being Mr. Frederick Law Olmsted, president of the Conference and an official also of the society. Invited to submit a report in writing to the Munitions Board of the Council, Mr. Olmsted recommended that the selection of sites and the preparation of plans for the individual sites be entrusted to three experts for each site, namely, a city planner, a water and sewer engineer, and an officer of the Quartermaster's Corps who was to be charged with the construction of the cantonment. Before these recommendations could be acted upon, the sites, with perhaps one or two exceptions, had been definitely selected. However, the recommendations were adopted before any work had been done on the sites, with the result that, in the case of each of the sixteen National Army cantonments, the planning in the field was carried out by a city planner and a water and sewer engineer, acting under a constructing quartermaster.

On the basis of instructions received from the Army, a typical or standard layout was drafted in the Office of Cantonment Construction. The layout covered the requirements of the military units in a normal division of the National Army. It comprised plans showing the arrangement of buildings for each unit: for ex-

BIRD'S-EYE VIEW OF PART OF CAMP LEWIS.

ample, a regiment of infantry; and also a diagram giving an ideal grouping of units, besides indicating the general outlines of the water supply and sewage disposal systems, the roads, lighting, heating and fire protection. Plans, elevations and structural details were furnished for all buildings.

The problem in the case of each cantonment consisted in approximating the standard layout as nearly as local conditions would permit. The military units, of course, were not identical in all the cantonments; and no two cantonments offered quite the same availability with respect to water supply, drainage, railroad service, highways, drill and maneuver grounds, rifle and artillery ranges, hospital plants, remount stations and the like. Furthermore, in the interest of economy, it was necessary to avoid extensive grading and heavy excavation for road, water and sewer construction.

It is believed that Camp Lewis was built in somewhat less time and at a much lower per capita cost than any of the other cantonments. If so, this was due largely to the fact that Major Stone and his civilian advisers were in the fortunate position of being able to choose the site. The site is part of a tract of 140,000 acres of rolling prairie, grass-covered and underlain to a depth of one hundred to two hundred feet with gravel and other debris from an old terminal moraine. The general level of the prairie is about two hundred feet above the sea, with a gradual slope of from ten to fifteen feet per mile toward Puget Sound. Hills, rising in some instances to a height of two hundred feet above the prairie, are wooded with great conifers, but have very little underbrush.

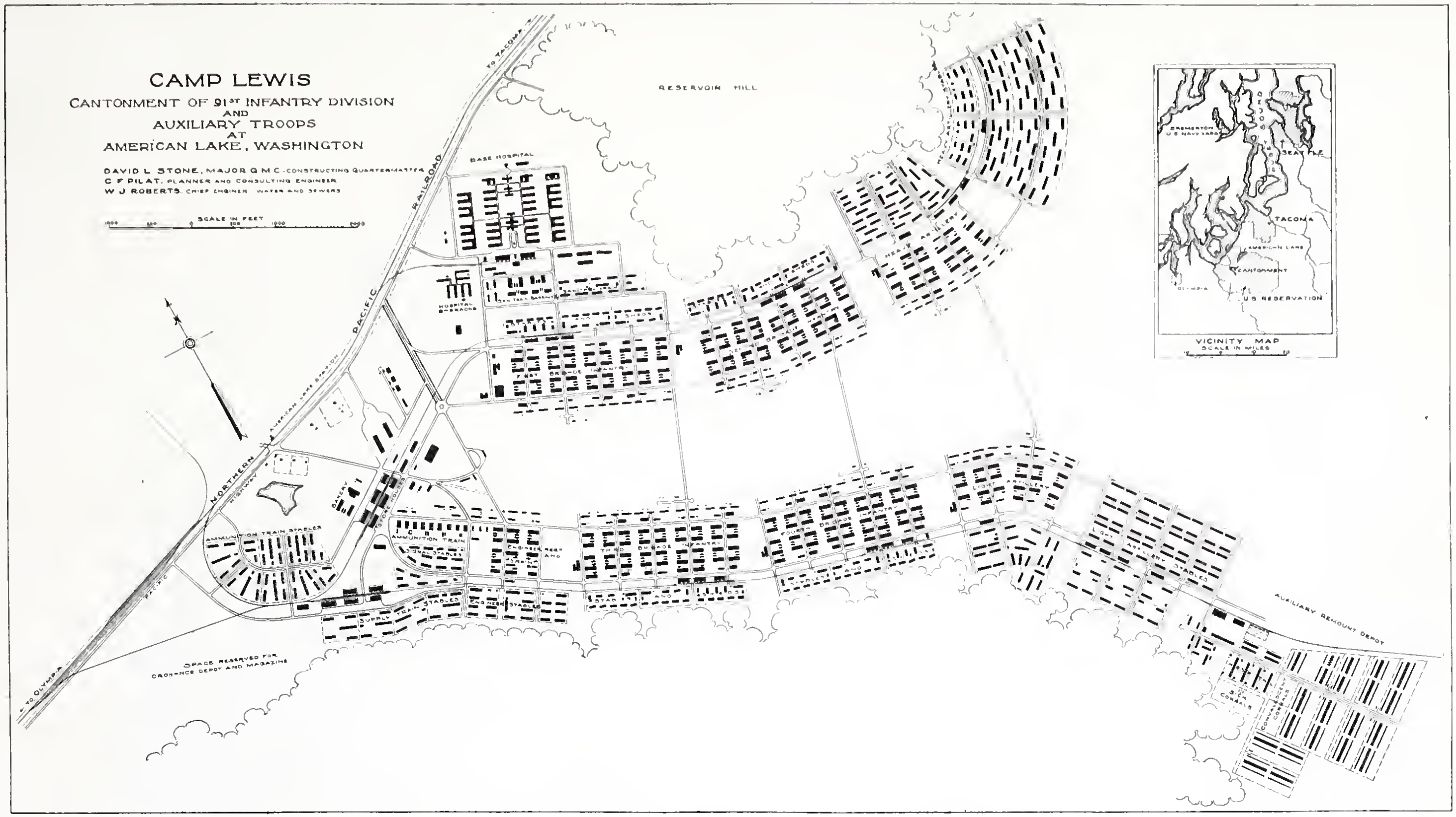
The soil is of negligible value for agriculture, because of its gravelly nature and because of the long, dry season; but owing to its excellent surface drainage and to its great area unobstructed by farms or villages, it has been used by the State of Washington for military purposes. As soon as it became known that cantonments would be needed the people of Pierce County, in which the prairie for the most part lies, voted to bond the county for $2,000,000 to acquire about 70,000 acres of the tract with a view to presenting it to the Federal Government. When a site for Camp Lewis was under consideration it was possible to select 6,000 acres from the larger tract. Deeds of possession covering the camp site were at once turned over to the Government, while condemnation proceedings were continued for the acquisition of the remainder of the 70,000 acres.

The work of selecting the site was greatly simplified, because an accurate topographical map of this part of the tract had previously been made by Major A. R. Ehrnbeck of the Engineer Corps of the Western Department. The presence of a railroad, on ground which enabled the tracks to be extended at low cost, was one of the factors in deciding the location of the cantonment. The site was equally favored in respect to other important considerations, such as water supply, sewage disposal, surface drainage, existing highways, road building and grading, and light and power lines.

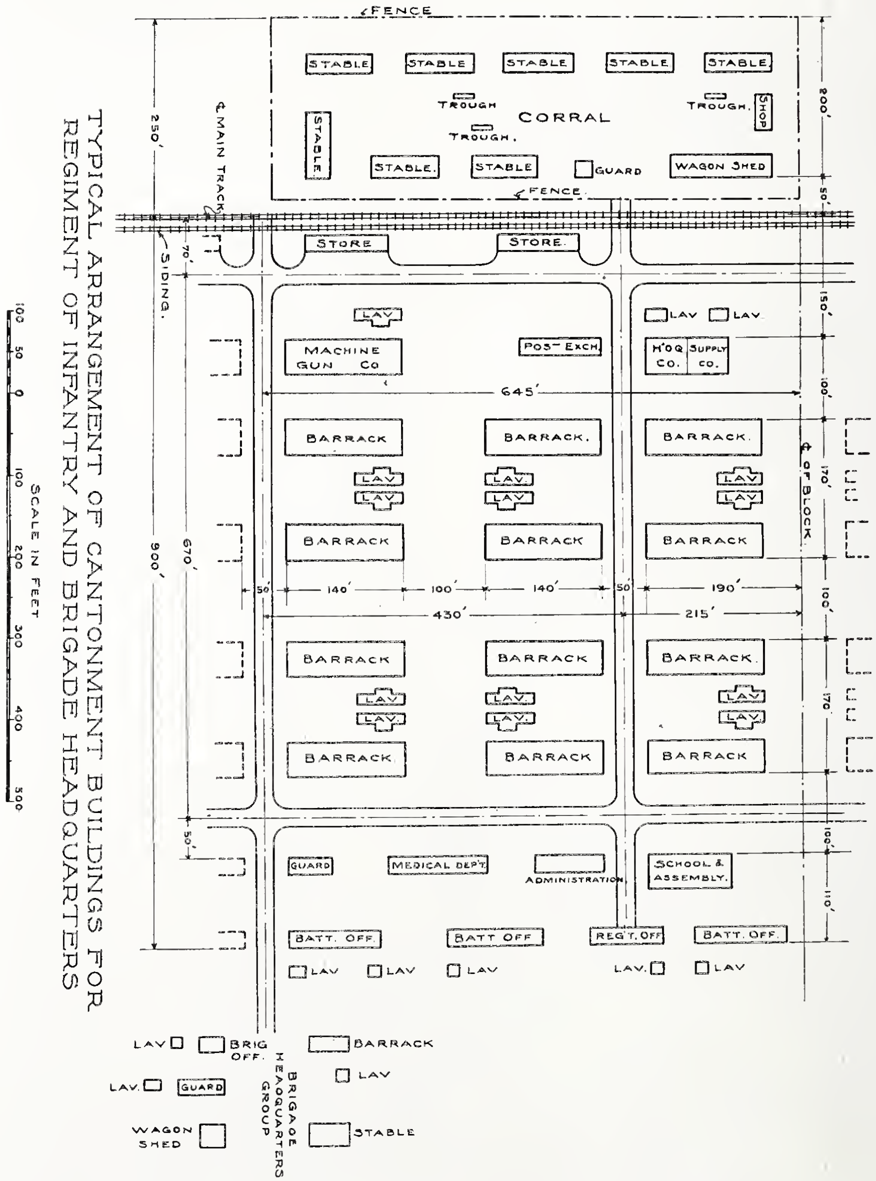
During the period of construction the Northern Pacific was the only railroad available for supplying materials and for transporting workmen to and from their work. It was understood, however, that the Chicago, Milwaukee & St. Paul and the Great Northern were to extend their tracks to the reservation in time for the movement of troops. A broad, well-paved highway, known as the Pacific Highway, provided direct communication with the important nearby cities of Tacoma, Olympia and Seattle.

The cantonment is laid out in the shape of a U. The service railroad running from one tip of the U around the base to the other tip is some five miles long. The streets are numbered, and each building carries its number and designation.

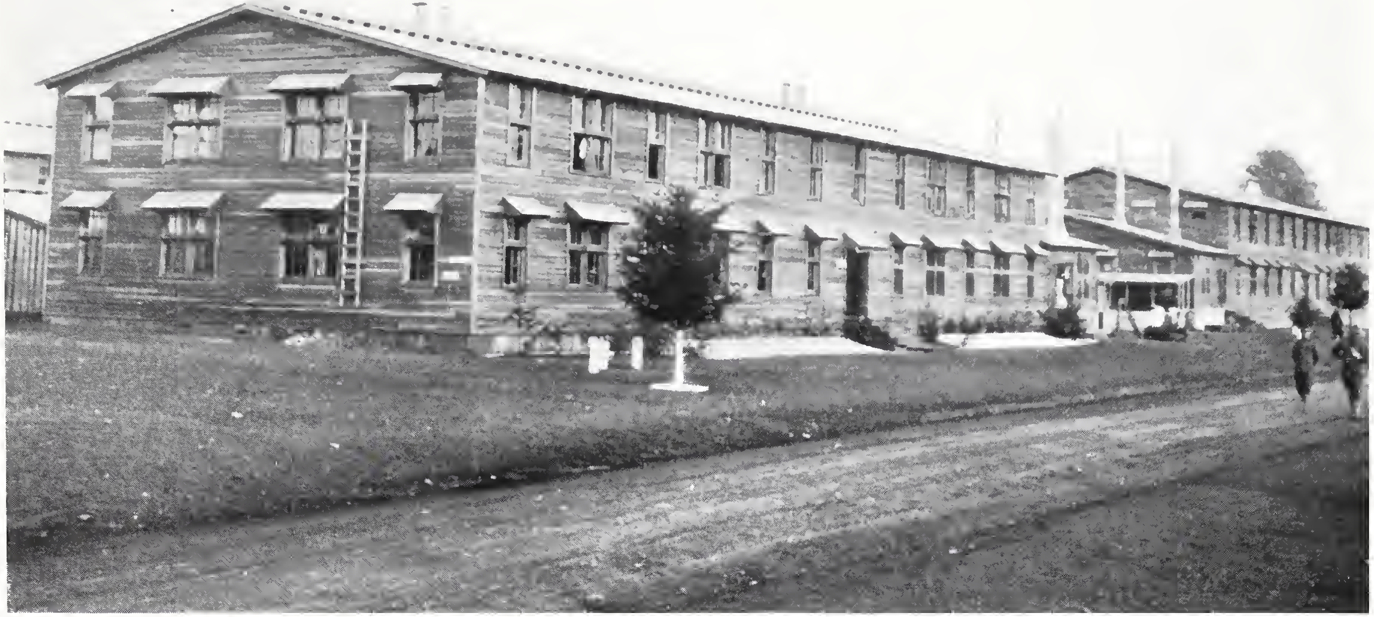
The first work undertaken was the securing of a temporary water supply from driven wells. An ample source of pure water was eventually developed on a strip of gravel which separates American Lake from Sequallitchew Lake, about a mile north of the encampment. The level of American Lake is twenty-five feet higher than that of Sequallitchew



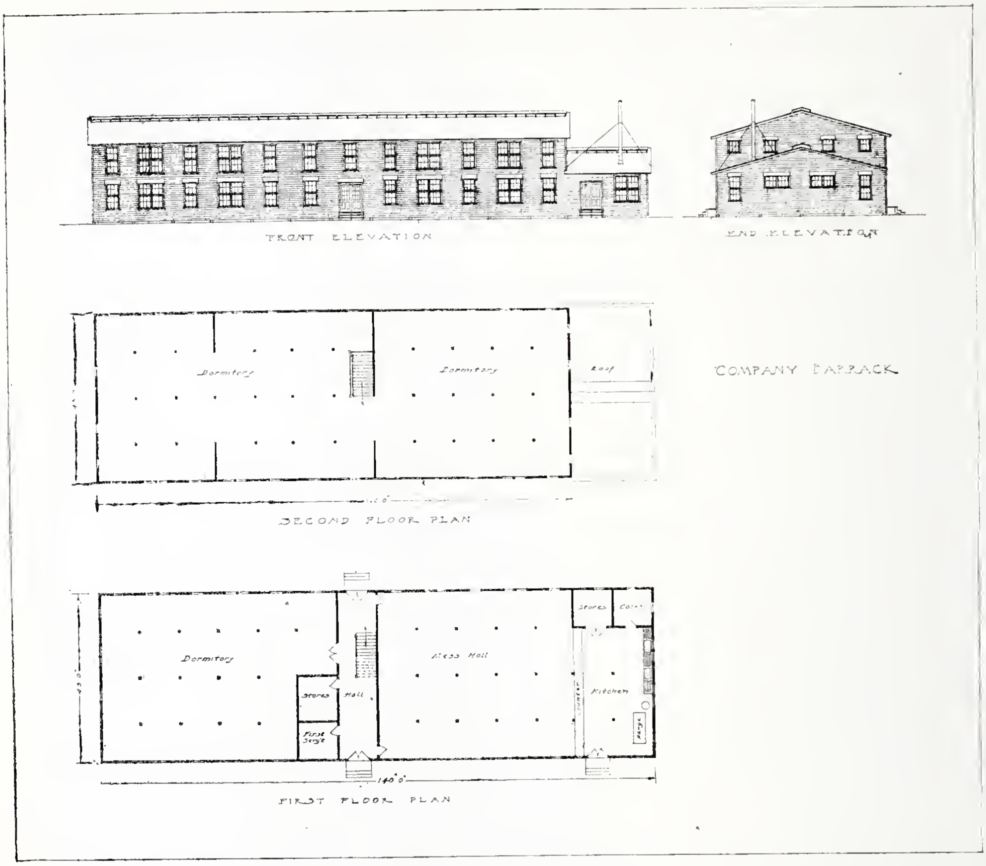
THIS PLAN SHOWS THE GENERAL ARRANGEMENT OF BUILDINGS, ALTHOUGH THE DISTRIBUTION OF TROOPS CONTEMPLATED WAS SUBSEQUENTLY CHANGED. FOR FULLER EXPLANATION, SEE TEXT.



TYPICAL ARRANGEMENT OF CANTONMENT BUILDINGS FOR REGIMENT OF INFANTRY AND BRIGADE HEADQUARTERS



INFANTRY BARRACK. PLANNED FOR TWO HUNDRED MEN, BUT OCCUPIED BY ONE HUNDRED AND FIFTY IN CONSEQUENCE OF ARMY REORGANIZATION.

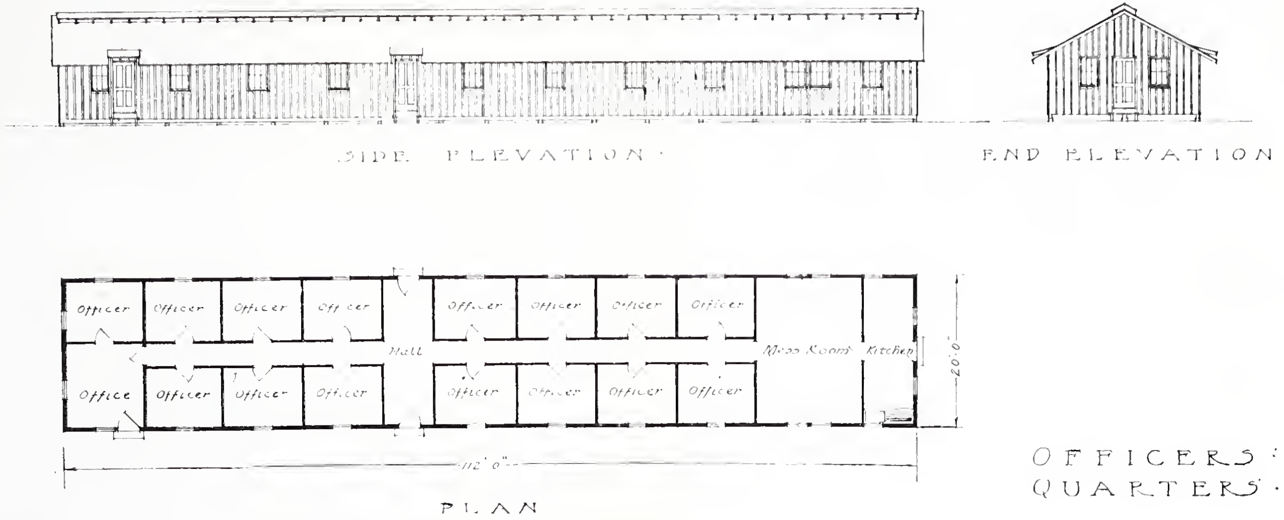


BARRACK DESIGNED FOR A COMPANY OF TWO HUNDRED MEN. WHEN THE NUMBER OF MEN IN A COMPANY WAS RAISED TO TWO HUNDRED AND FIFTY, TWO BARRACKS WERE ASSIGNED TO EACH COMPANY.

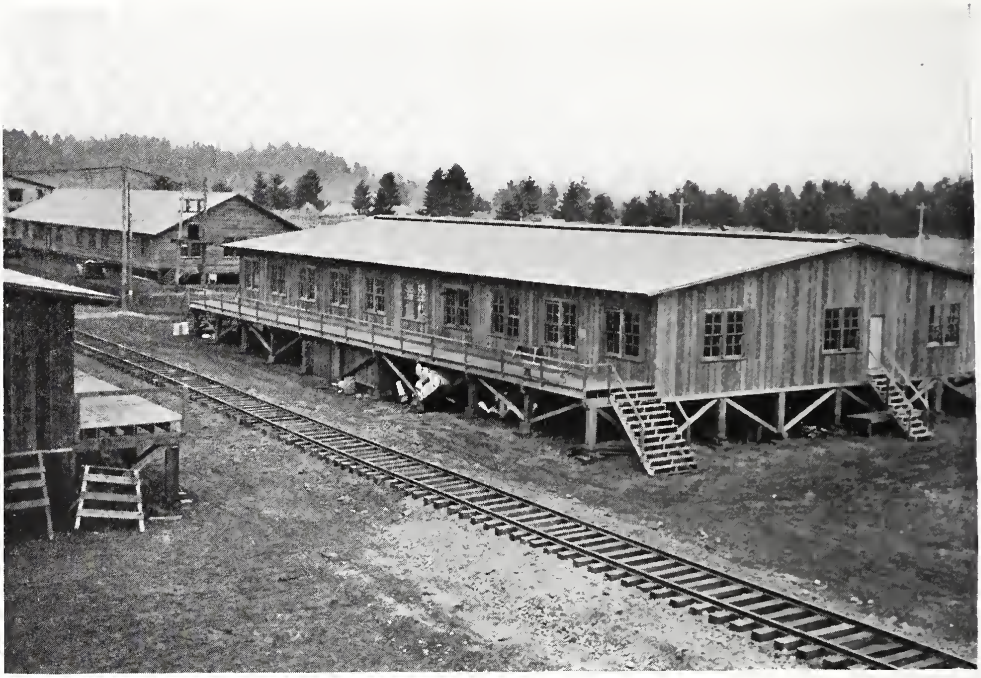
Lake. Near the head of the latter are a number of flowing springs. Here an area of one hundred and fifty feet by seventy-five was scooped out to make a pool ten feet deep. The excavated gravel was used to build a dike between the pool and the lake. Consequently, if the pumping should at any time exceed the capacity of the springs, water will percolate through the dike from the lake, thus affording a filtered emergency supply.

The main pumping units, consisting of two electric pumps, are installed at the pool. Two other pumping units are established at driven wells. Besides these four pumps, operated by electricity, it is the intention to install a gasoline pump at an additional well, for use if anything should happen to the electric power.

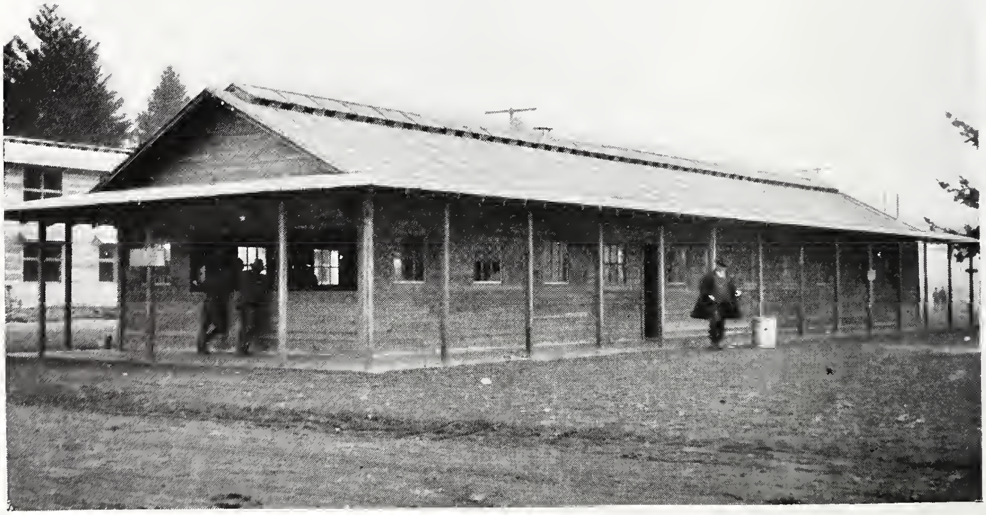
The water is pumped through two twelve-inch mains to wooden tanks on top of Reservoir Hill. The capacity of the tanks is six hundred thousand gallons, and the elevation approximately three hundred and twenty-five feet. From the tanks the water is distributed through two fourteen-inch mains to the cantonment. From these mains, which run under the drill ground to the south leg of the cantonment, two twelve-inch lines extend to the east and two ten-inch lines to the west of the south leg. Similarly, on the north leg, two twelve-inch lines extend to the east and two ten-inch lines to the west, connecting in a loop on the westerly side of the cantonment. The



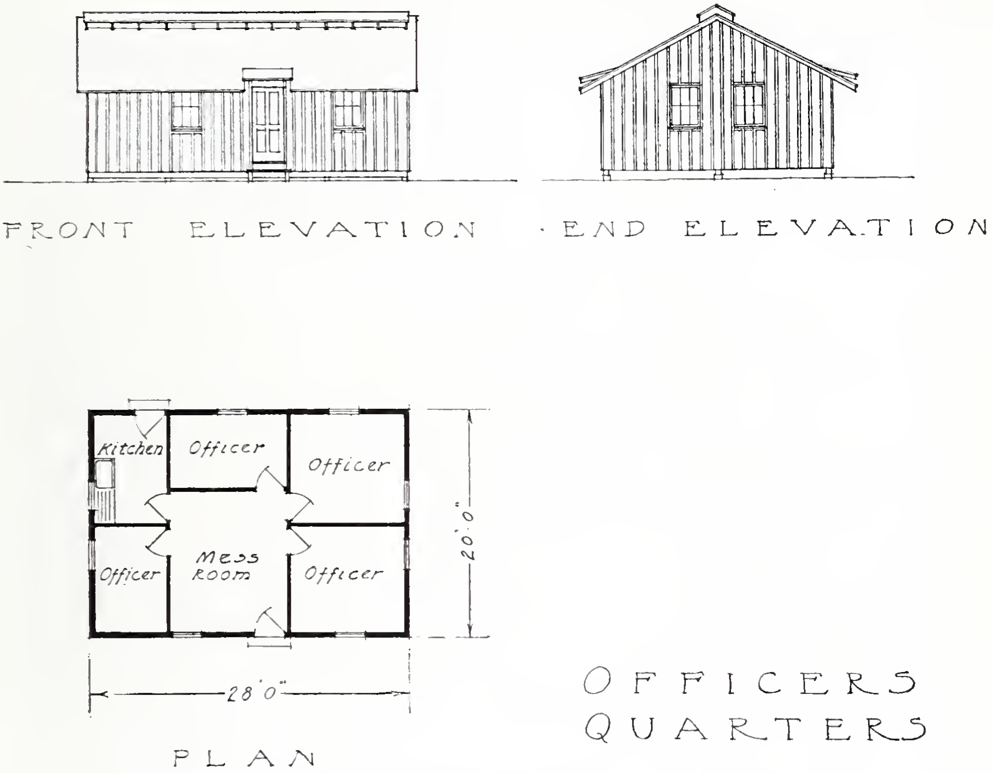
BARRACK FOR REGIMENTAL OFFICERS.



TYPICAL WAREHOUSE, CAMP LEWIS.



TYPICAL POST-EXCHANGE BUILDING, CAMP LEWIS.



BRIGADE OFFICERS' BARRACK, CAMP LEWIS.

double line of pipe is an important factor of safety.

There are seventy-five thousand feet of wood-stave pipe in sizes from six inches to fourteen inches, and one hundred and twenty-five thousand feet of iron pipe in sizes from three-fourths of an inch to two inches; making about seventeen miles of wood-stave pipe and twenty-four miles of iron pipe.

No difficulties of any consequence were encountered in providing for the sewage disposal. The prairie has a gradual slope toward the west, to Puget Sound, making it a very simple matter to construct a trunk sewer with only slight fills and cuts, in no place exceeding ten feet, from the cantonment to the cliff at Puget Sound. A steel penstock was provided to carry the sewer down the cliff to the Sound.

When it was found that there was a scarcity of twenty-four inch to thirty-inch vitrified pipe, but plenty of cement pipe of these sizes, the constructing quartermaster decided to use the supplies which could be procured locally.

The only problem which developed in laying out the sewer system was in the case of the connections with the artillery groups, especially on the north leg. At this place there was a break in the grade; and had the typical plans been followed, it would have necessitated a cut of over twenty feet in depth for a considerable distance. In order to avoid this, the plans were modified so that all the barracks of the three regimental units were grouped together on the high land; the cut was thus reduced to less than ten feet in depth and shortened in length. By this change a substantial saving in money and time was effected. The sewage disposal system contains one hundred and fifteen thousand feet of vitrified pipe, varying from six inches to twenty-four inches in diameter; fifty thousand feet of six-inch to thirty-inch concrete pipe, and five hundred and sixty-eight feet of twelve-inch steel pipe for the penstock; making approximately thirty-one miles of sewer pipe.

The roads were built of local gravel with an oil surfacing. Recently, approximately eight miles have been hard surfaced with asphaltic concrete.

The streets and buildings of the cantonment are lighted by electricity, current being obtained from a public service company and distributed on Government poles. The barracks are heated by stoves and the officers' quarters by individual steam plants. The hospital buildings are heated from a central steam plant. Telephone and telegraph lines are installed on the Government poles.

The construction of buildings was begun almost simultaneously with the commencement of the engineering work already mentioned. The level ground called for very little grading. Local lumber was used, and ten saw-mills, established on the grounds, cut it into the required dimensions, after which it was delivered at the building sites by rail or auto truck.

The plan indicating the number and location of buildings of each type to be constructed was put into the hands of the contractors on July 3. In accordance with the Tables of Organization of the National Army, approved on May 31, the plan provided accommodations for the following primary units:

Twelve regiments of infantry, grouped in four brigades of three regiments each;

Three regiments of light artillery, grouped in one brigade;

Three regiments of heavy artillery, grouped in one brigade;

One regiment of engineers;
One engineer train;
One ammunition train;
One supply train;
One sanitary train;
One field signal battalion.

Each of the foregoing regimental units was to form a self-contained group. Other units provided for were a division headquarters and division storehouses. A hospital group containing 1,000 beds and occupying approximately sixty acres, an ordnance depot, an incinerator, a bakery and an auxiliary remount station to accommodate about 7,000 animals were later authorized and built.

Each brigade of infantry comprised three regiments; each regiment, three battalions; each battalion, four companies; making twelve companies to a regiment and thirty-six to a brigade. Each company, of two hundred men, was to occupy a single two-story wooden barrack, of which the lower story was to contain sleeping quarters at one end and a messroom and a kitchen at the other, with a hallway separating the sleeping quarters from the messroom. The upper story was to be occupied for sleeping quarters.

Each barrack was to be served by a small detached structure equipped as a lavatory, with showers, etc. Each infantry regiment also had a number of stables and wagon sheds, a workshop and a guardhouse, which constituted a "corral." This was separated from the barracks by a highway for provisioning a sequence of regimental units. Each regiment had special barracks for battalion and regimental officers. The officers' quarters were grouped with an administration building, a school and assembly building, a building for the medical department and other special buildings; and this group also was separated from the barracks of the men by a road.

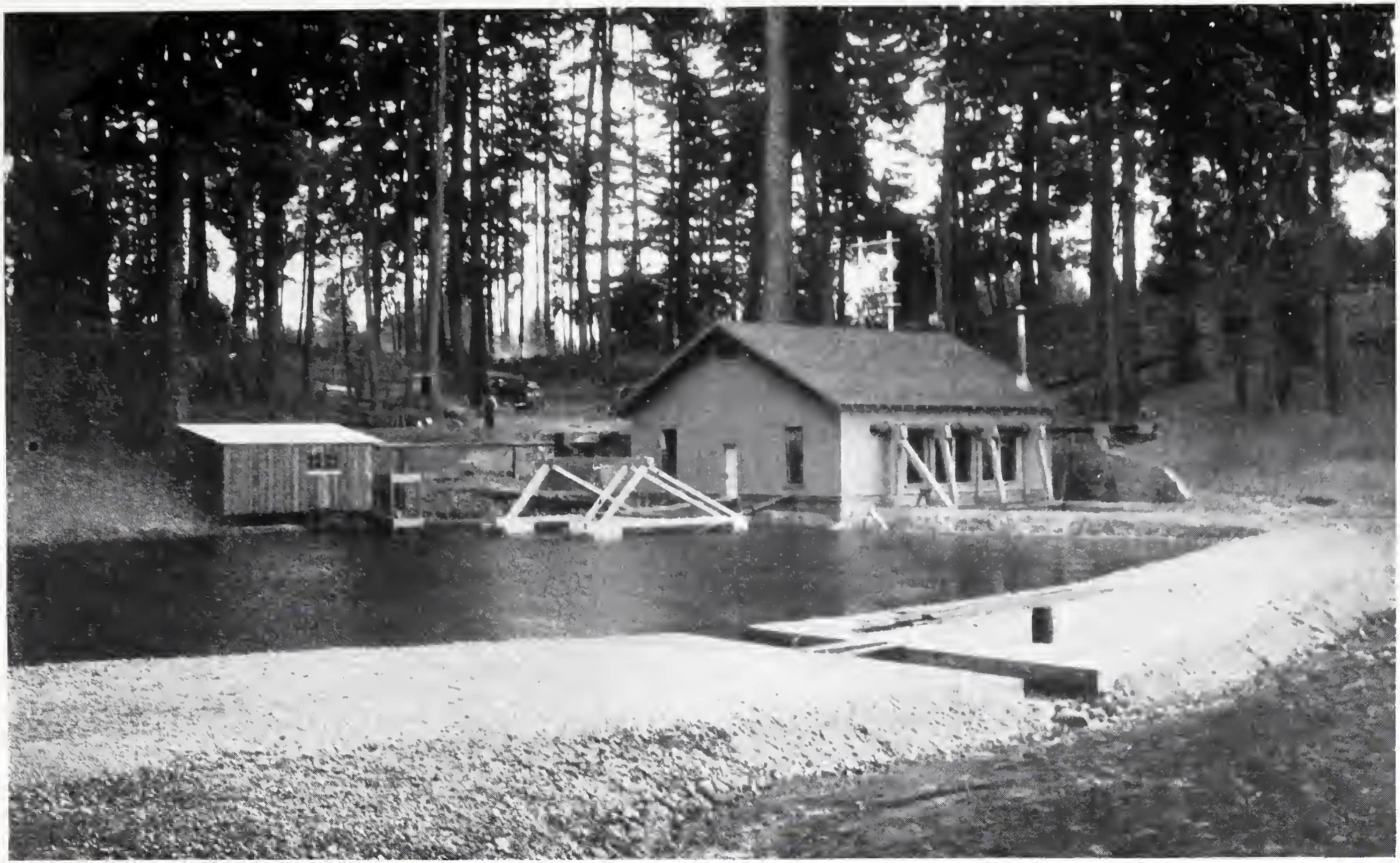
Each regimental unit provided buildings for a machine gun company, a supply company and a headquarters company, together with a post-exchange.

Each brigade was to have its own brigade headquarters, in front of the middle one of the three regiments of the brigade.

A typical plan of the arrangement of buildings for a regiment of infantry and brigade headquarters is reproduced herewith.

The typical arrangements for artillery units and the various trains naturally differed because of specific military requirements. These units were grouped at the ends and at the base of the U-shaped cantonments, while the infantry regiments occupied the central space in the legs of the U.

While the work of construction was under way, a change of army organiza-



PUMPING PLANT AT LAKE
SEQUALLITCHEW, CAMP LEWIS.

tion was made in consequence of recommendations by the British and French Commissions. The number of men in a company was increased to two hundred and fifty and the composition of brigade units was also changed. Instead of four infantry brigades of three regiments each, there are now two infantry brigades of two regiments each. A machine-gun battalion was added to each brigade. The heavy artillery brigade was eliminated, but a trench mortar battery was added to the field artillery brigade.

Under the new army organization it was determined to quarter fewer men in a barrack. This made it necessary to alter some buildings and also to increase the number of buildings. At present a company of infantry occupies, not a single barrack, but two barracks, one of one hundred and fifty men and another of one hundred men.

According to the Tables of Organization of August 3, Camp Lewis was designated to accommodate the Ninety-first Infantry Division with auxiliary troops; and in September, buildings to house six auxiliary battalions, each of 1,000 men, were authorized.

The changes of army organization which took place during the building of the cantonment, while radical from a military standpoint, did not materially alter the layout of the cantonment, including the grouping of buildings. However, in reading the plan of the cantonment and the plan of a regimental unit published herewith, the fact should be kept in mind that the distribution of troops indicated on these plans no longer applies.

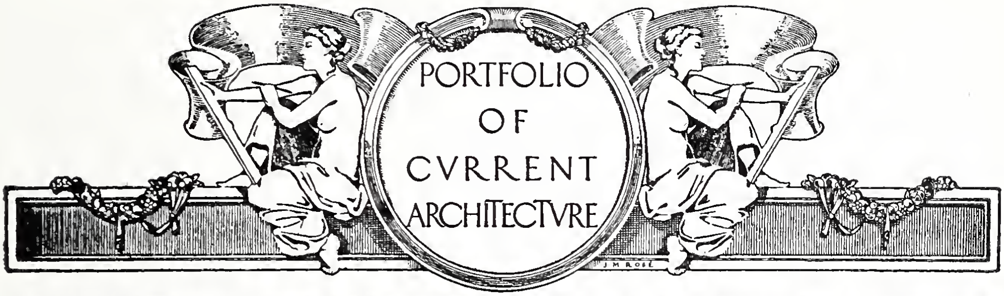
It is to be noted also that since the work under these plans was started, thus fixing the general arrangement and character of the buildings, a number of non-military activities in the interest of the soldiers have been authorized, which call for numerous additional constructions. Thus for every brigade there are now, or soon will be, one Y. M. C. A. building, while a great Y. M. C. A. auditorium serves as a community centre for the cantonment. Housing provision has also been made for the Knights of Columbus and for the Y. W. C. A., whose Hostess House is intended for the use of women visitors to the encampment.

All the cantonment buildings are of frame construction. The barracks and officers' quarters have double floors with paper lining; the walls are ceiled on the inside and are covered with building paper and siding on the outside. Two-ply roofing paper is used throughout the construction. The warehouses, stables and other minor buildings are finished on the outside with one-ply roofing paper with battens. The hospital buildings are of better construction and have wall-board partitions and ceilings.

Labor was obtained from Tacoma, Seattle, Spokane, Portland and San Francisco. The work began with approximately 5,000 men employed, but the number eventually exceeded 10,000. Eight hours constituted the day's work, and the standard scale prevailing in Tacoma at the time the contract was awarded prevailed throughout the period of construction. The commissary department of the contractors boarded all the men who wished to live in the camp, and those who preferred to live in Tacoma, about sixteen miles distant, went back and forth on special trains or by motor cars and auto trucks.

There were no serious labor troubles to interrupt the progress of the work; and the health of the construction force was effectively safeguarded by the sanitary officer, Major Eugene Northington.

The construction contract for Camp Lewis was awarded on June 14, the building plan was placed in the hands of the contractors on July 3, and the housing for the soldiers was ready to receive them when they began to arrive on September 3.



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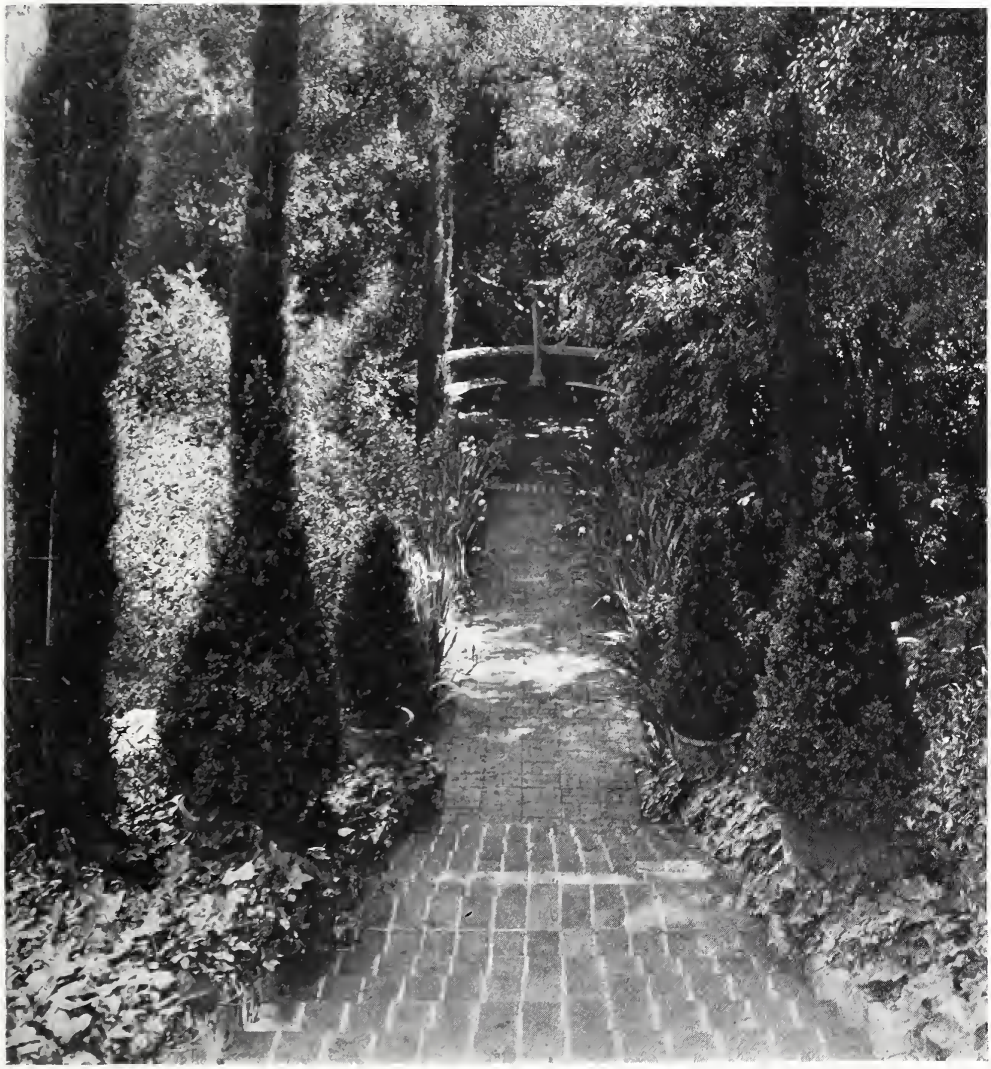
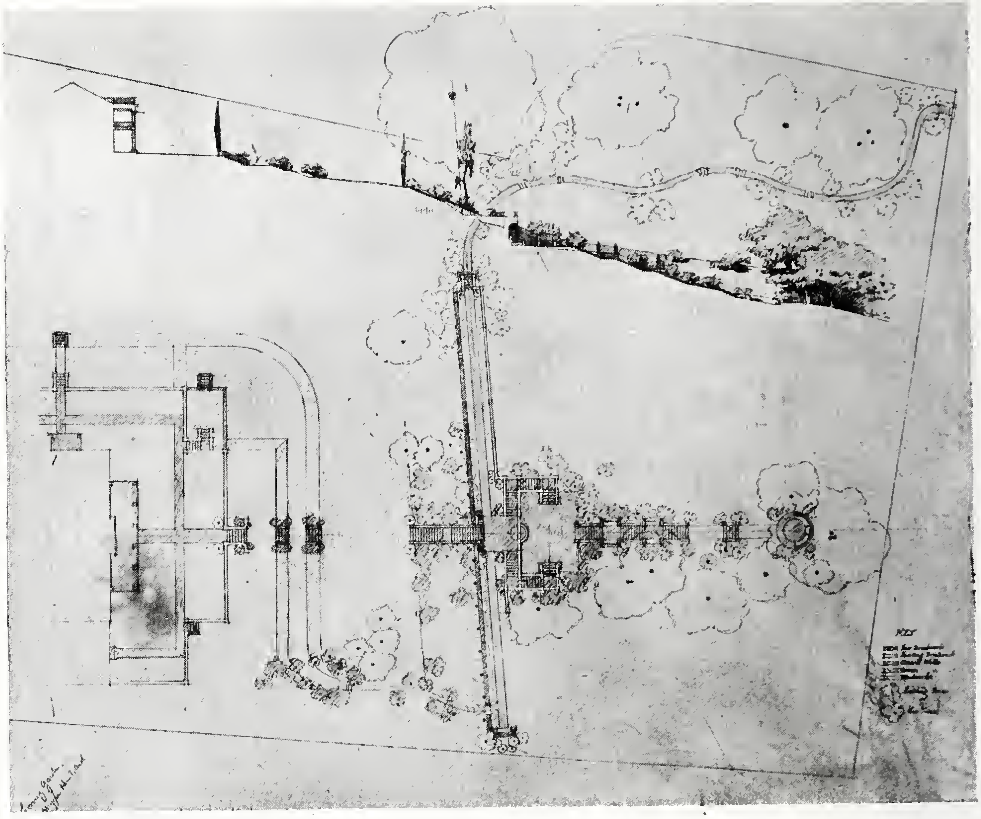


Photographs by
Miss Frances Benjamin Johnson

THE LORING GARDEN, SAN RAFAEL HEIGHTS,
PASADENA, CAL. MYRON HUNT, ARCHITECT.



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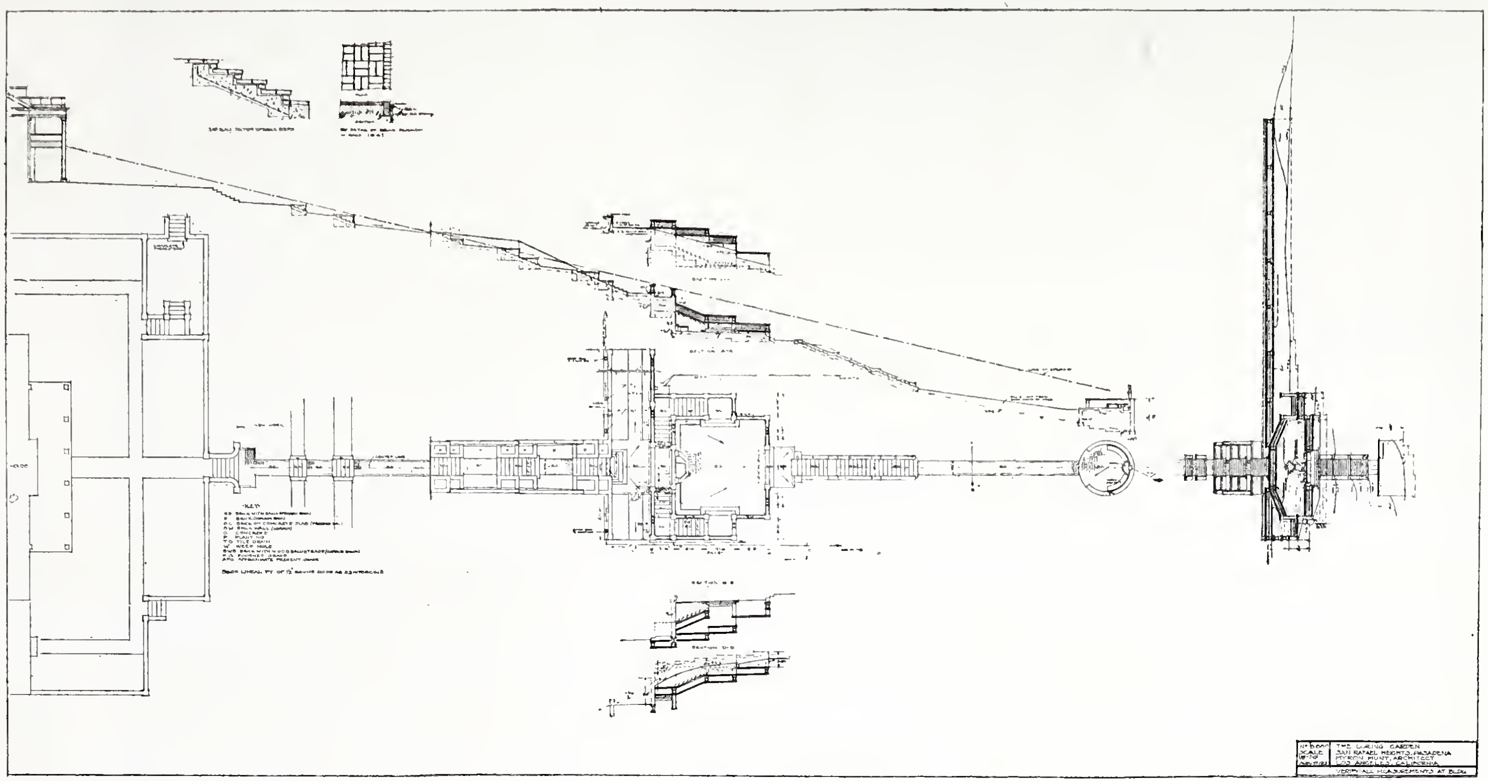

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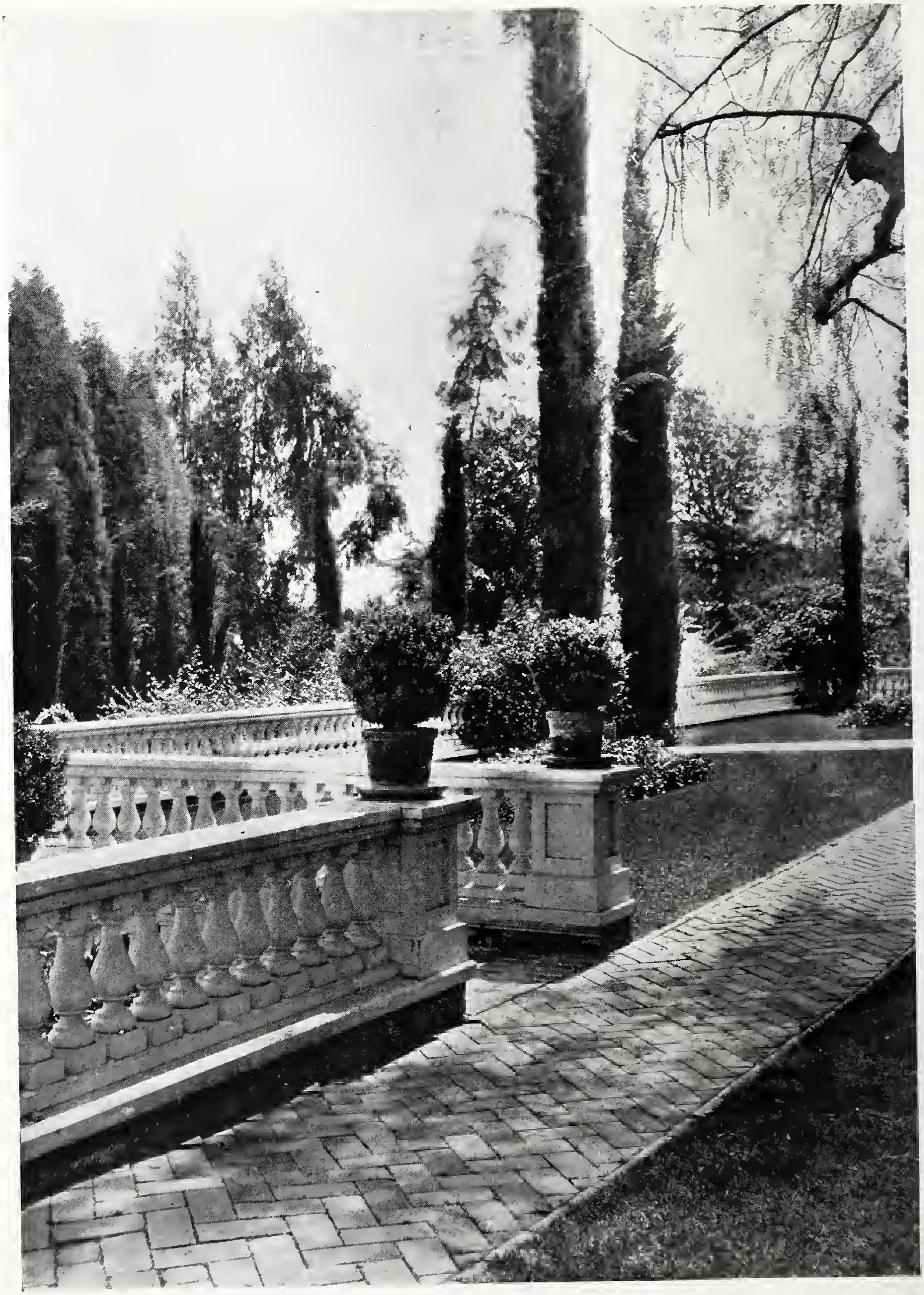

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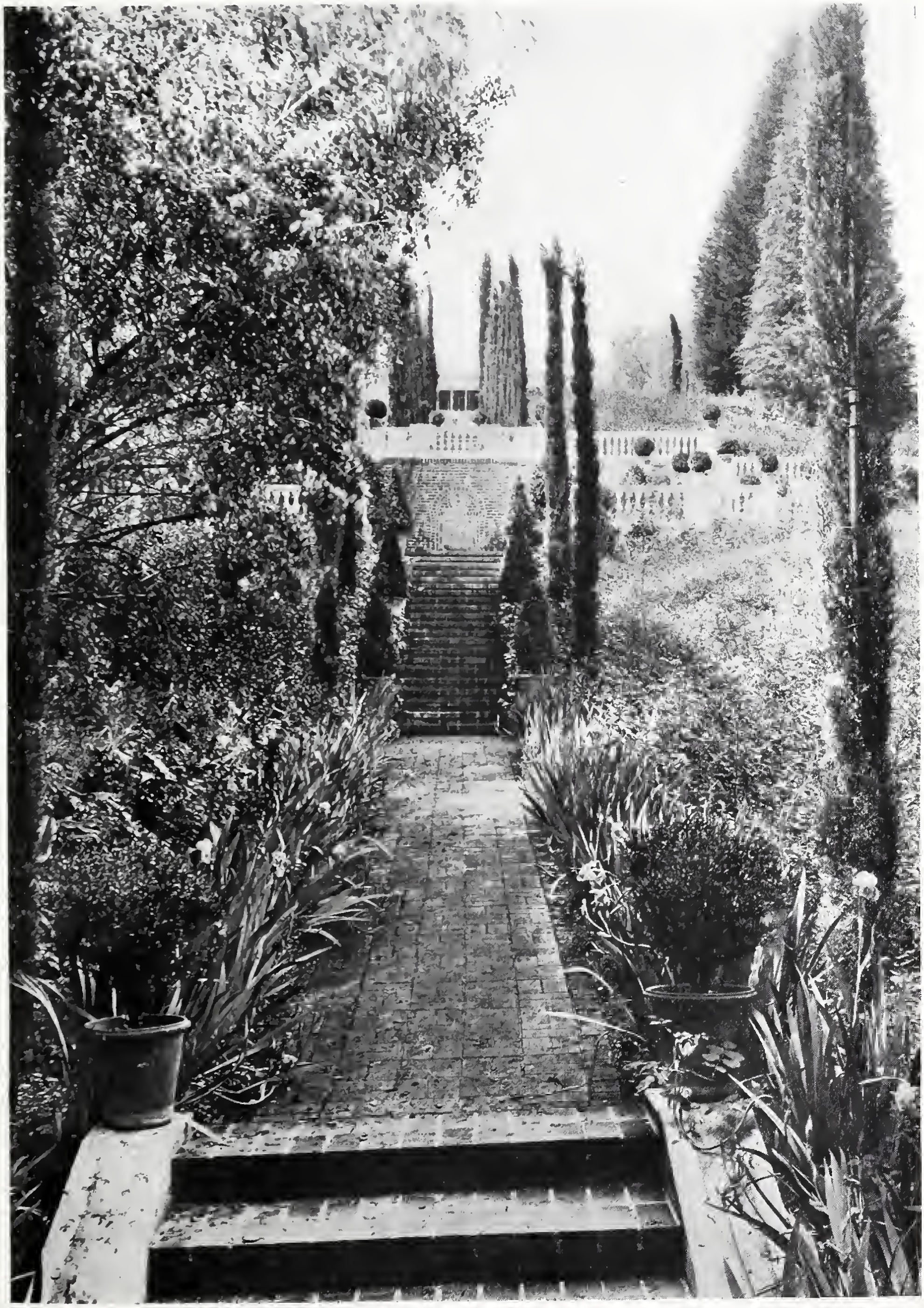

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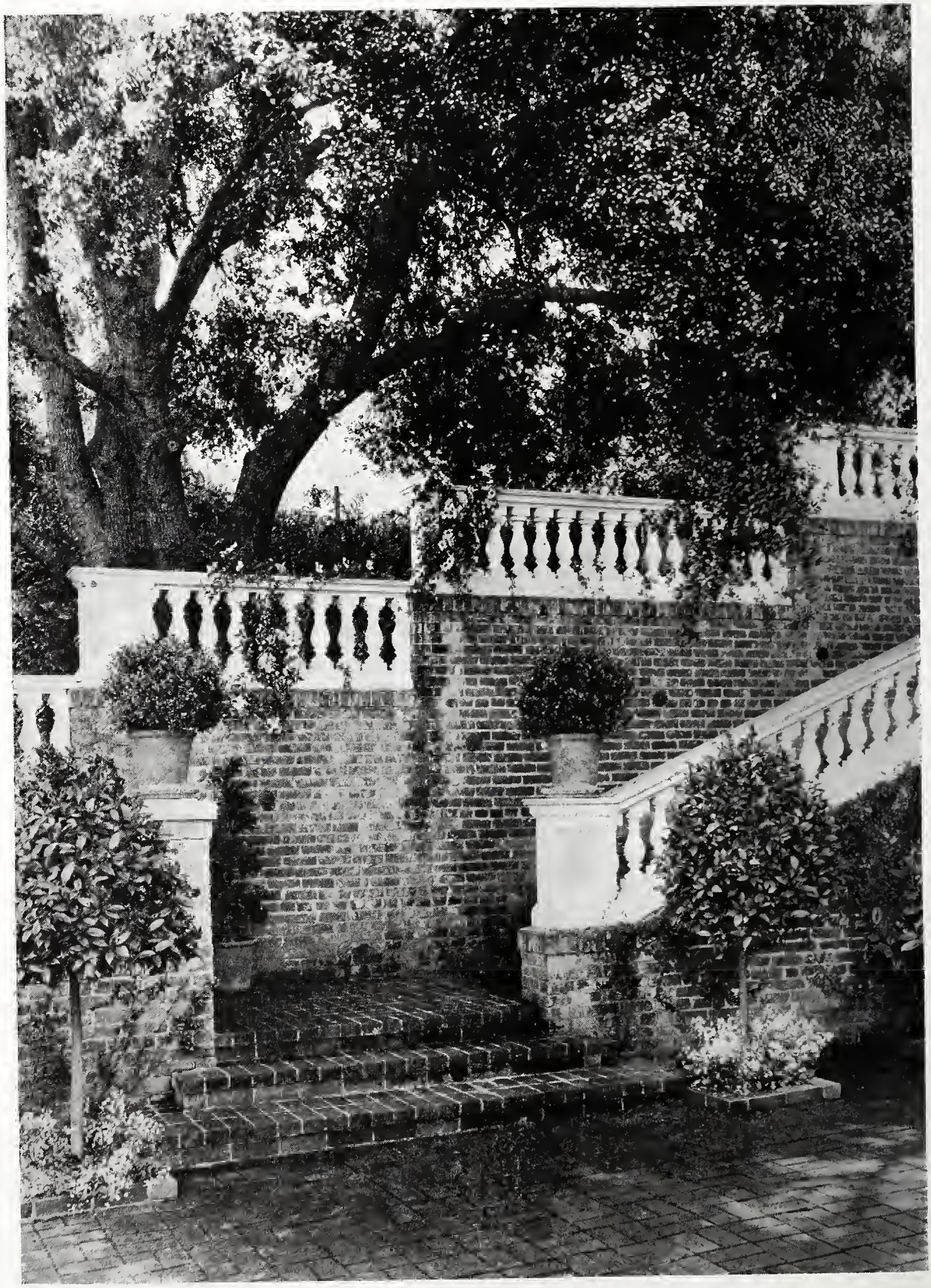

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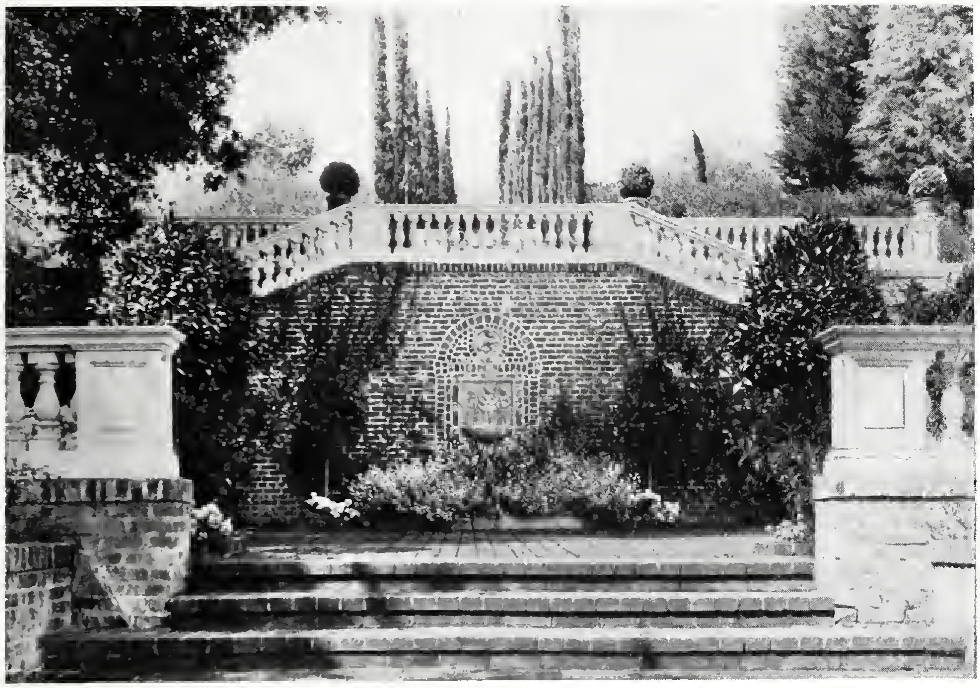

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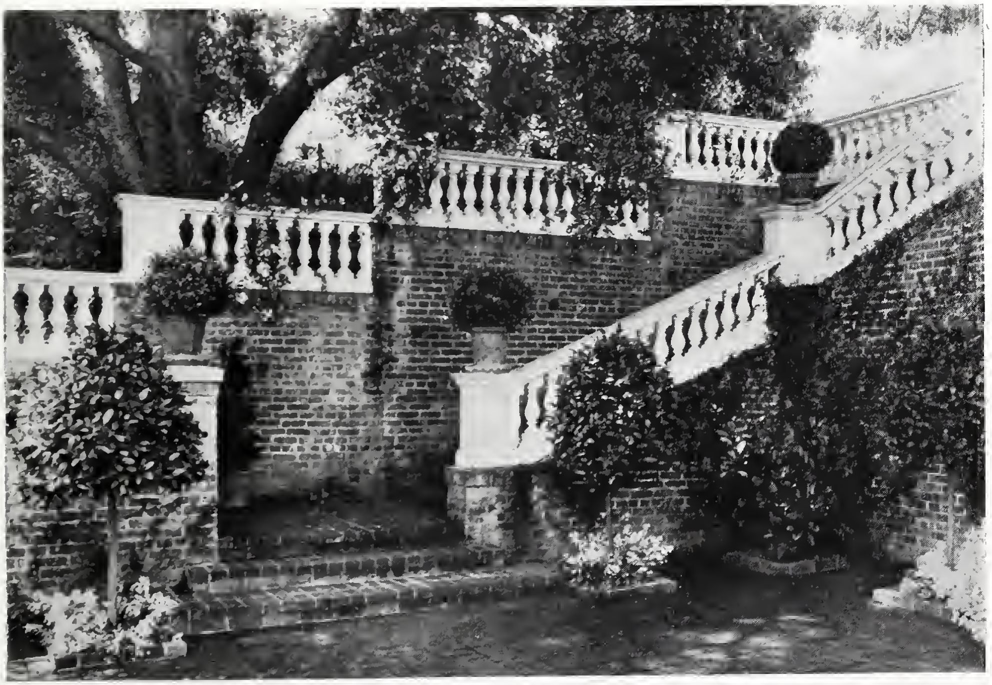

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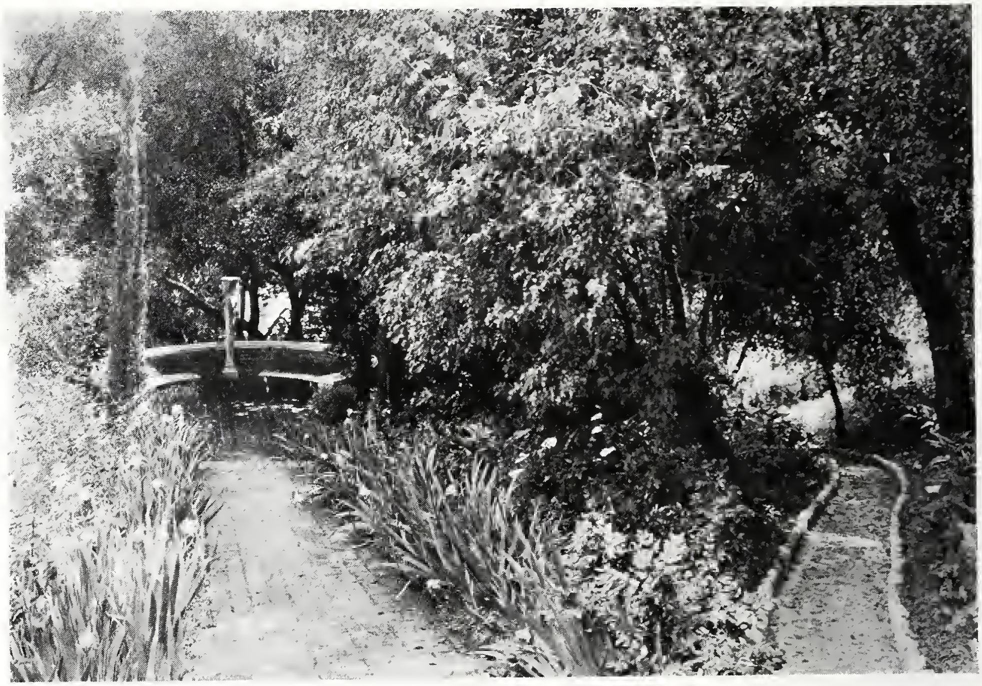

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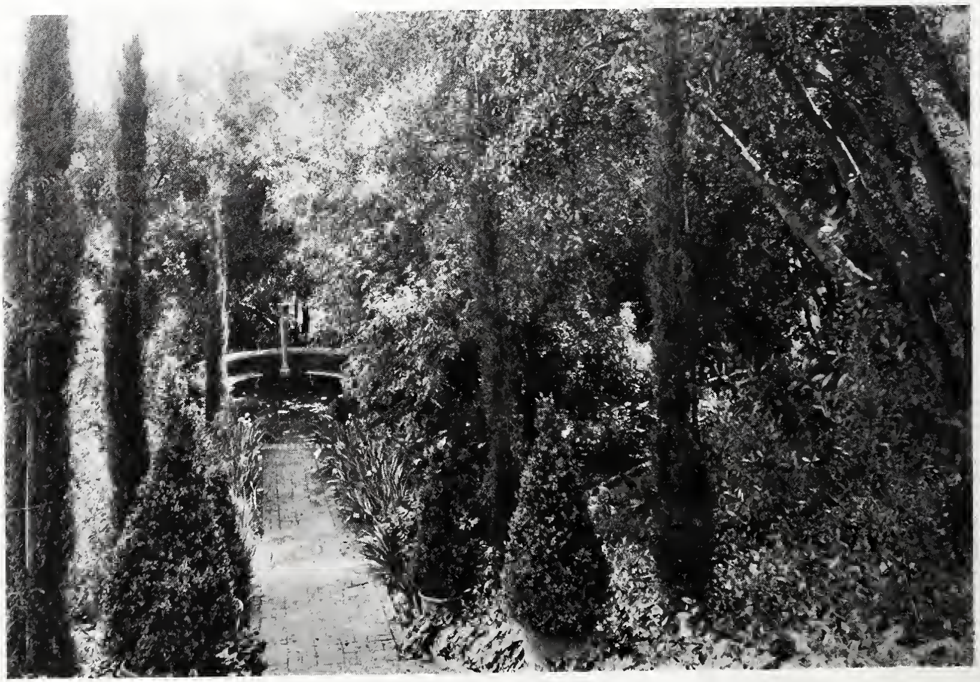

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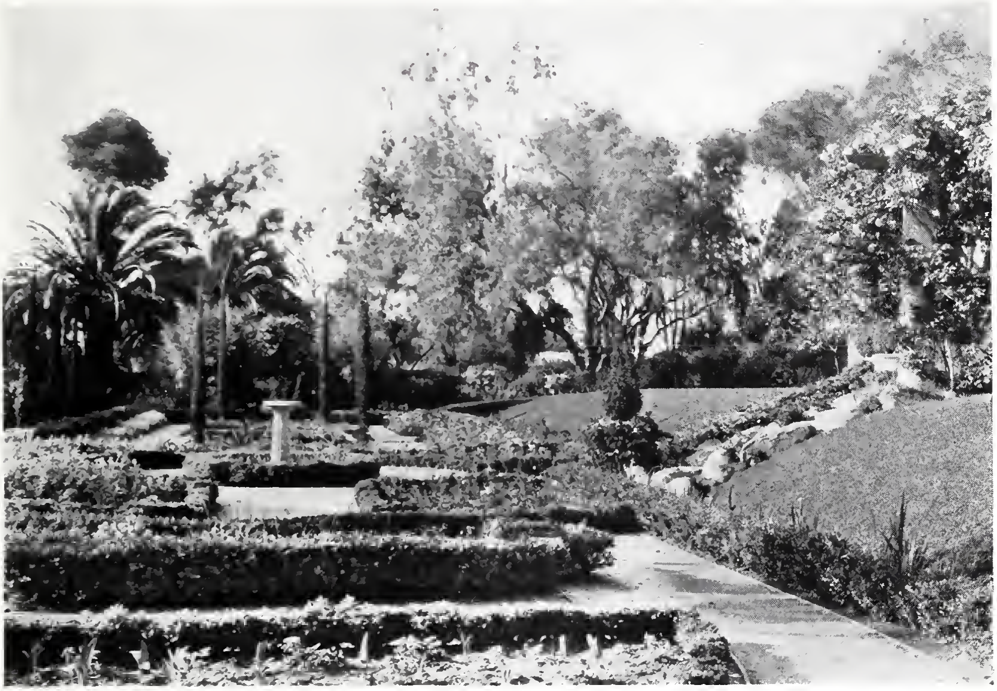

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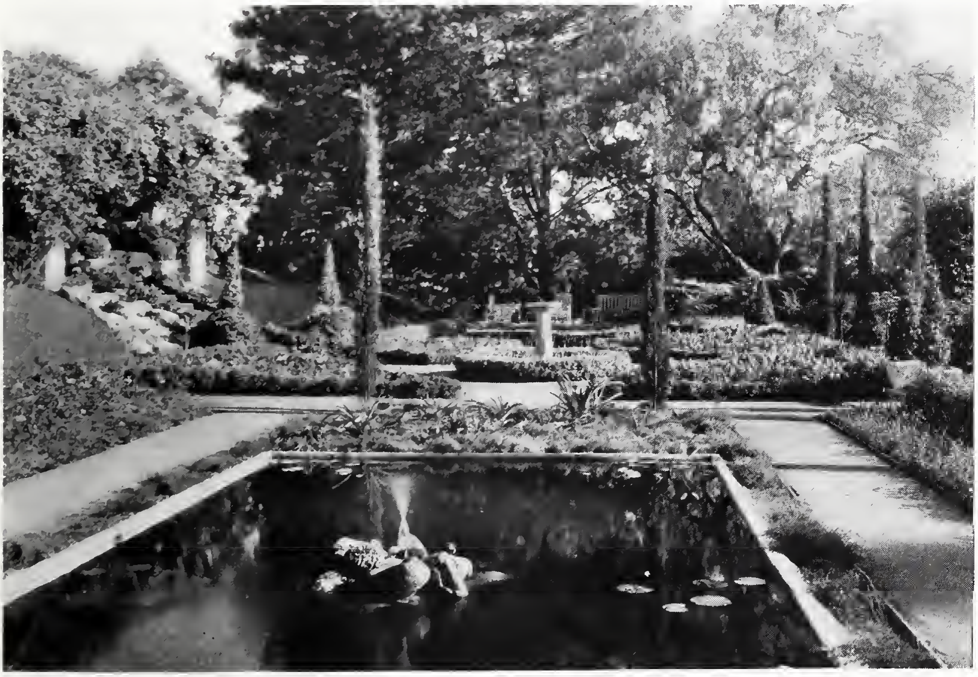

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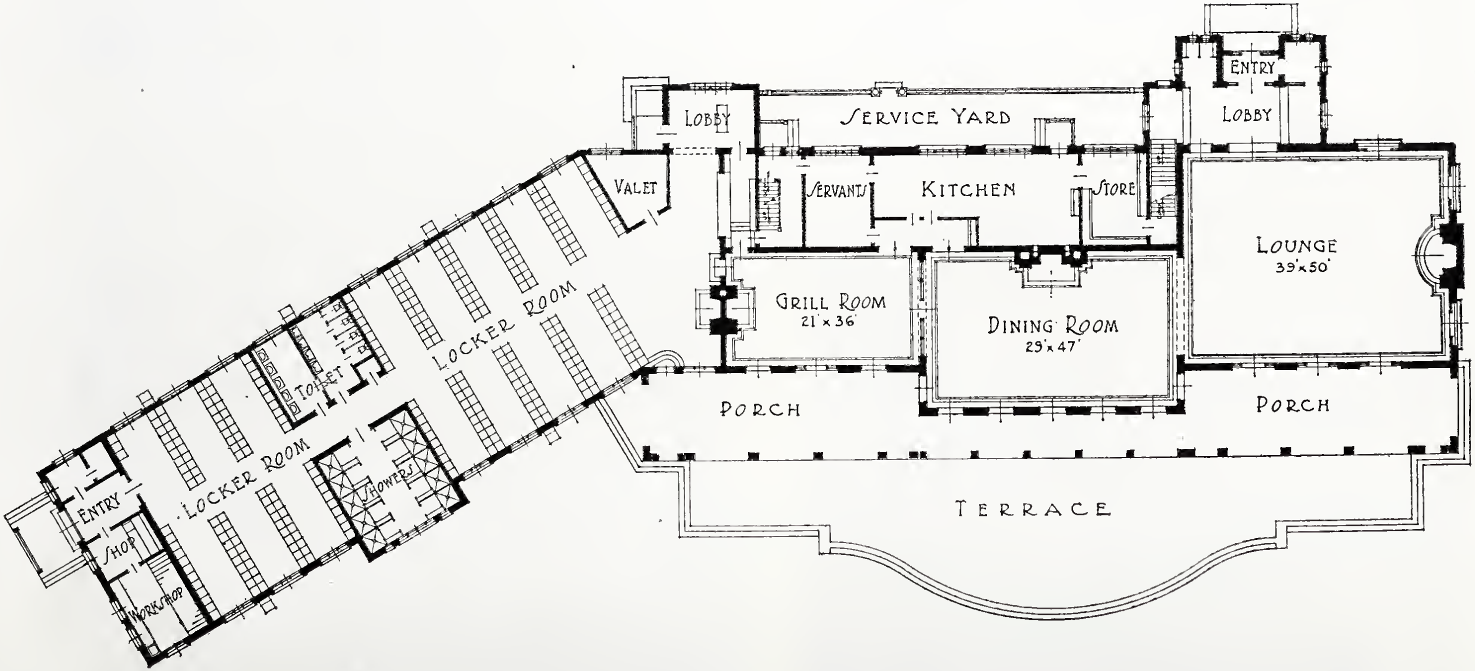

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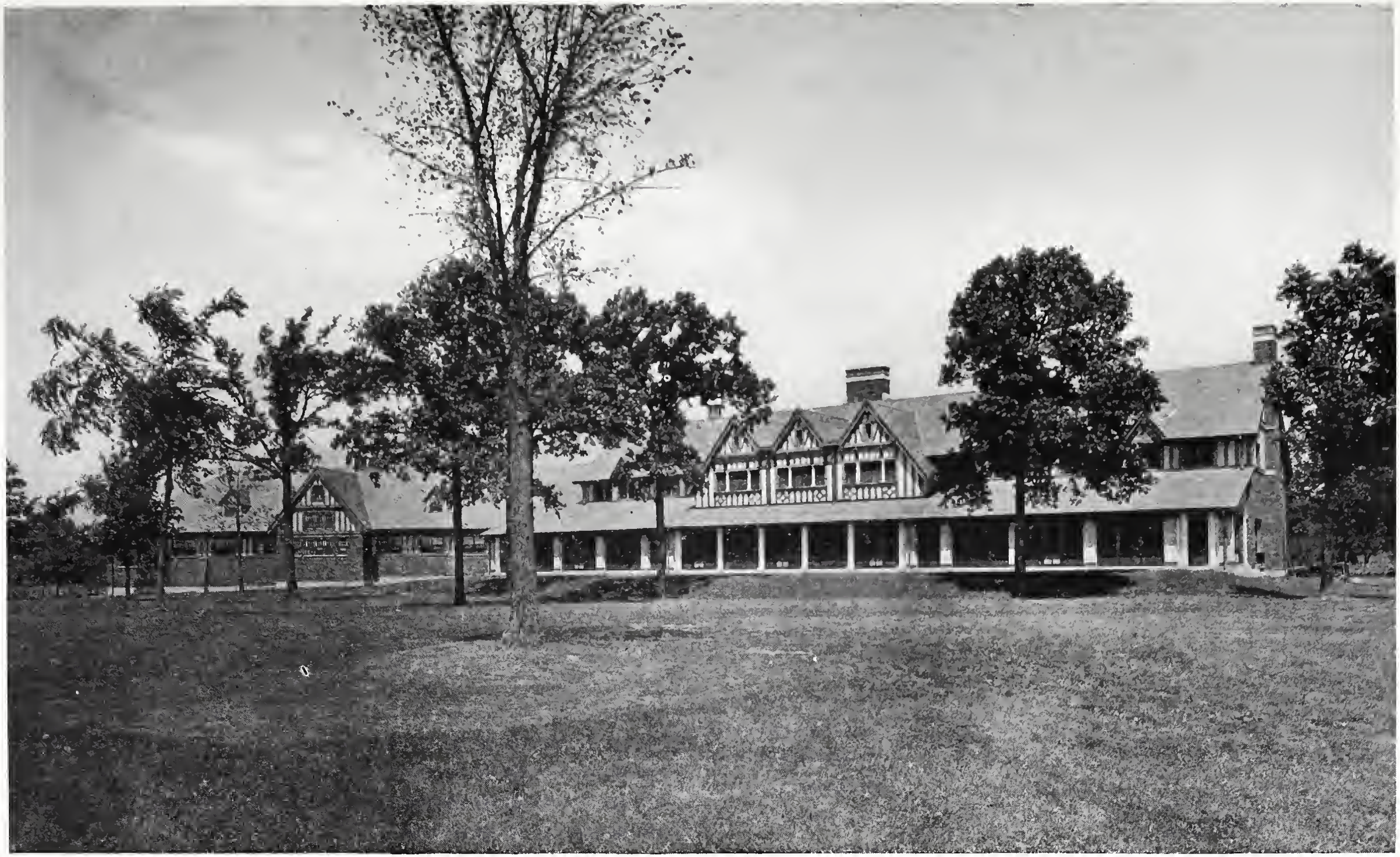

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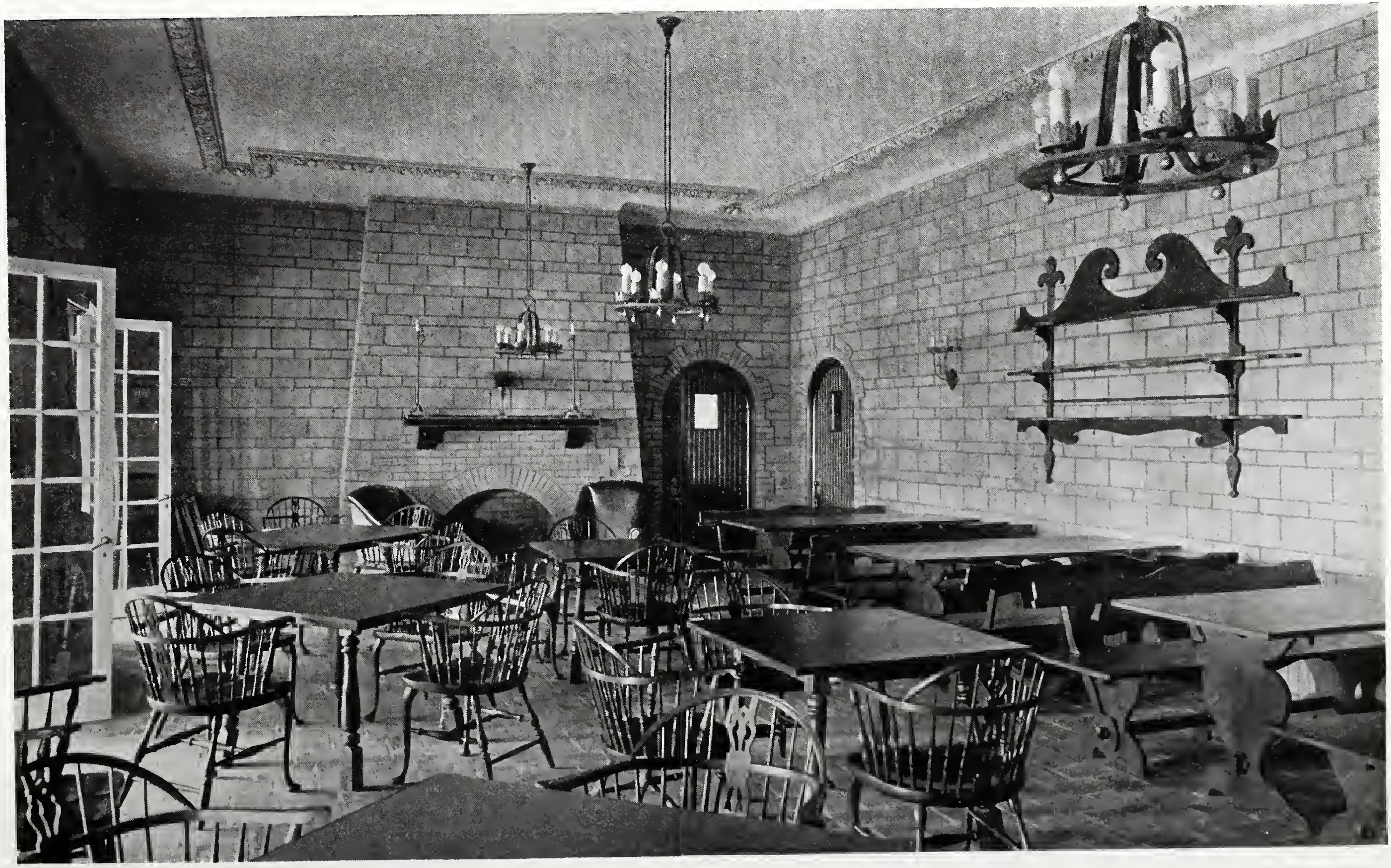
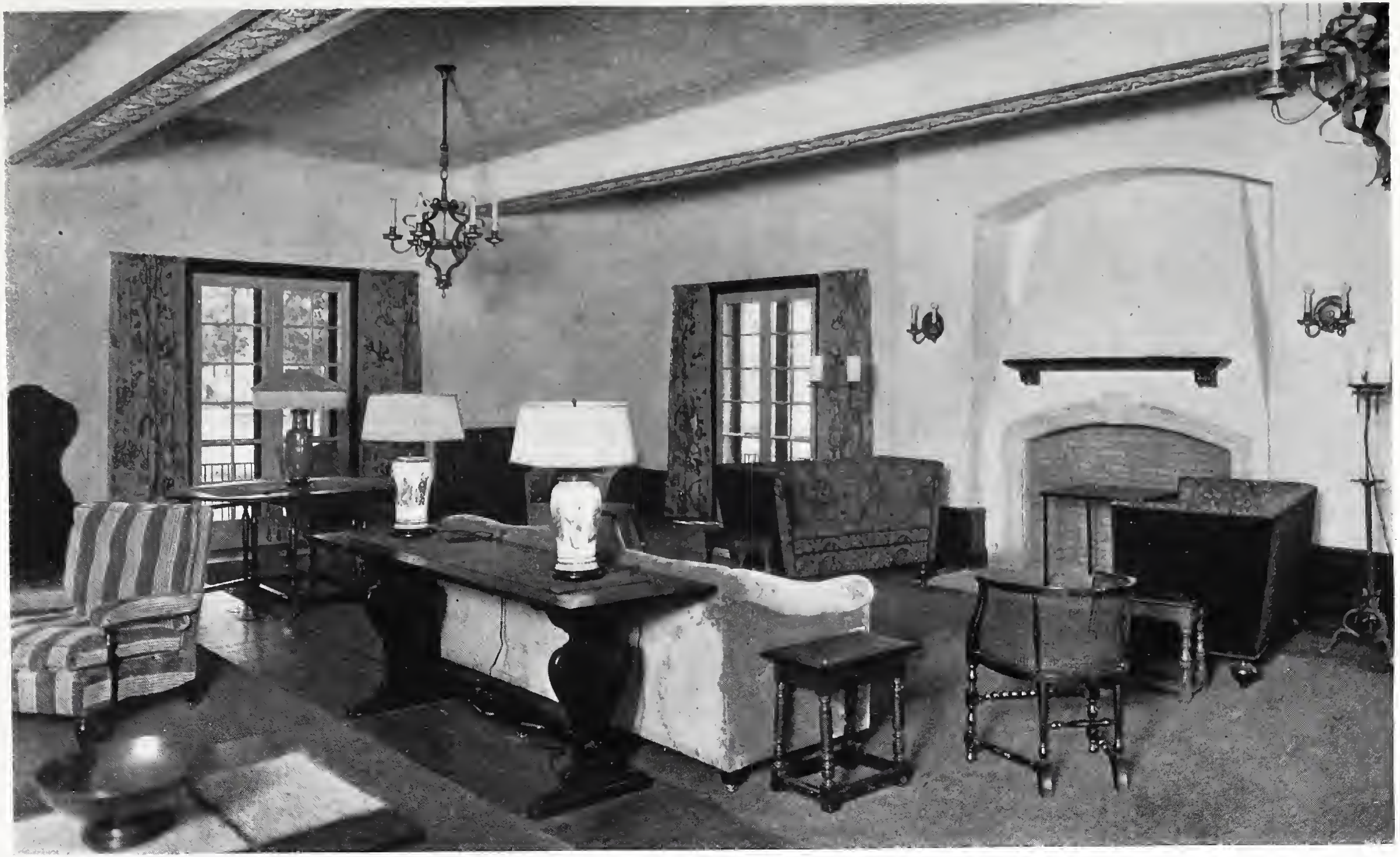
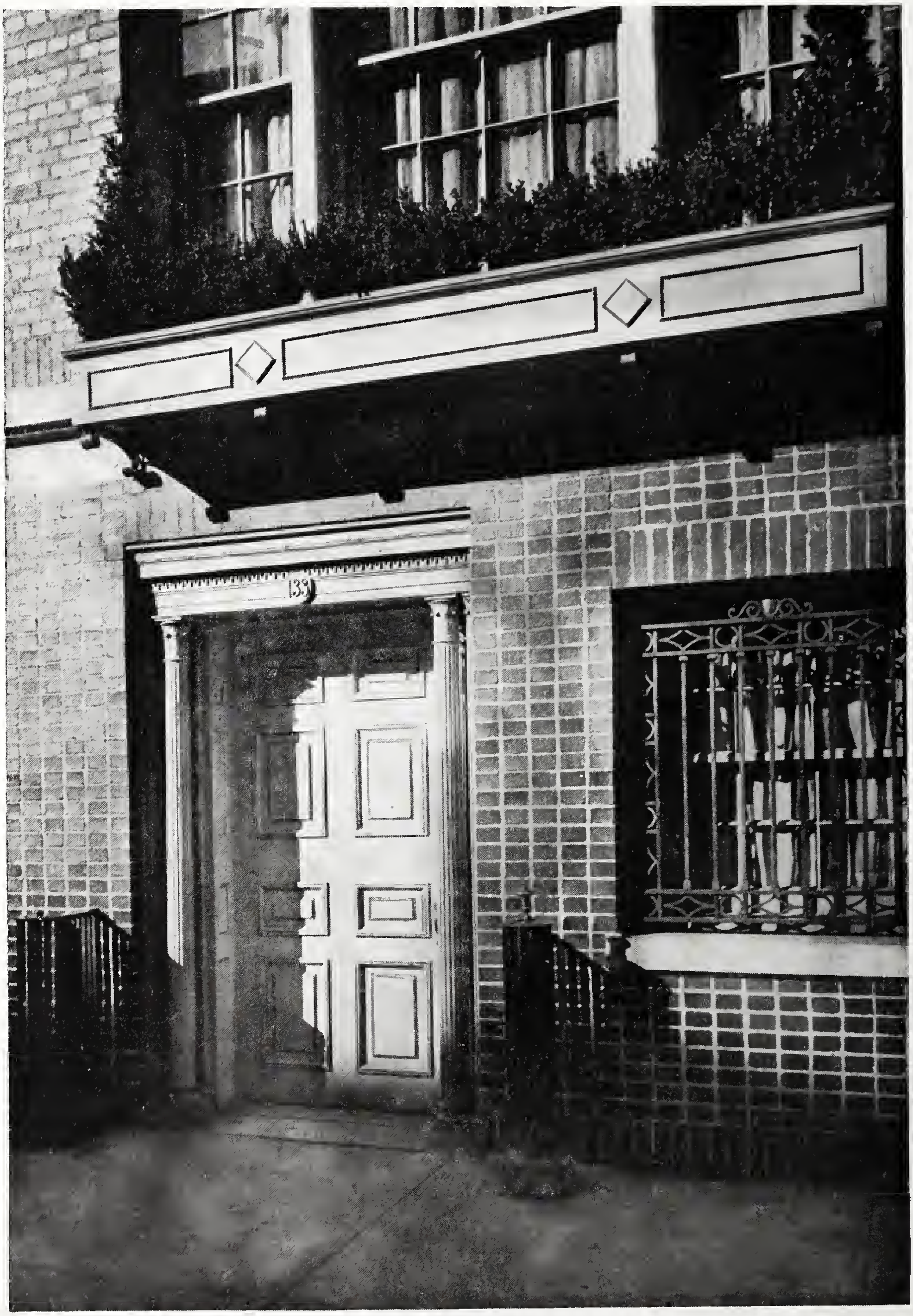


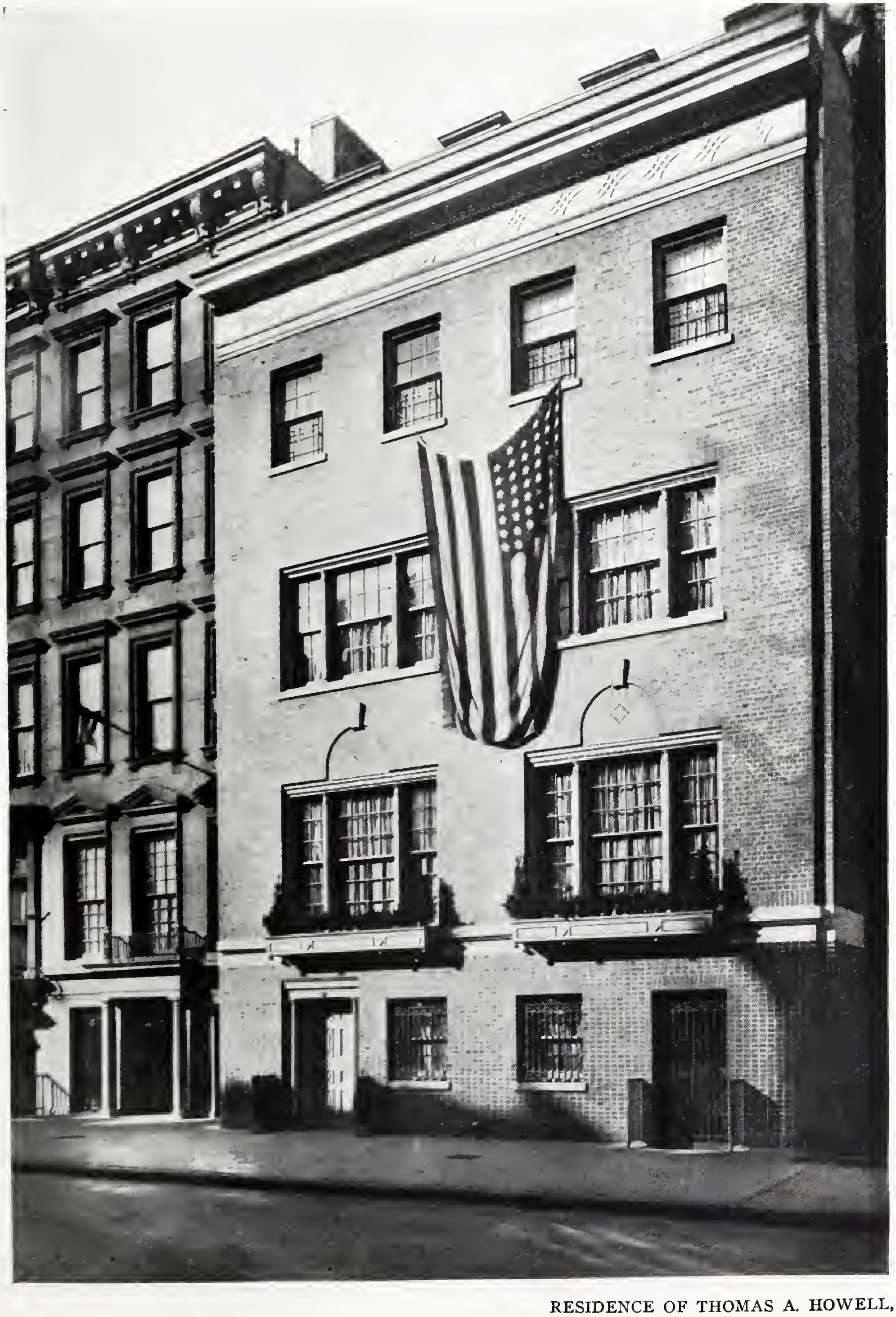
GRILL ROOM — BOB O'LINK GOLF CLUB, HIGHLAND PARK, ILL. BROWN & WALCOTT, ARCHITECTS.



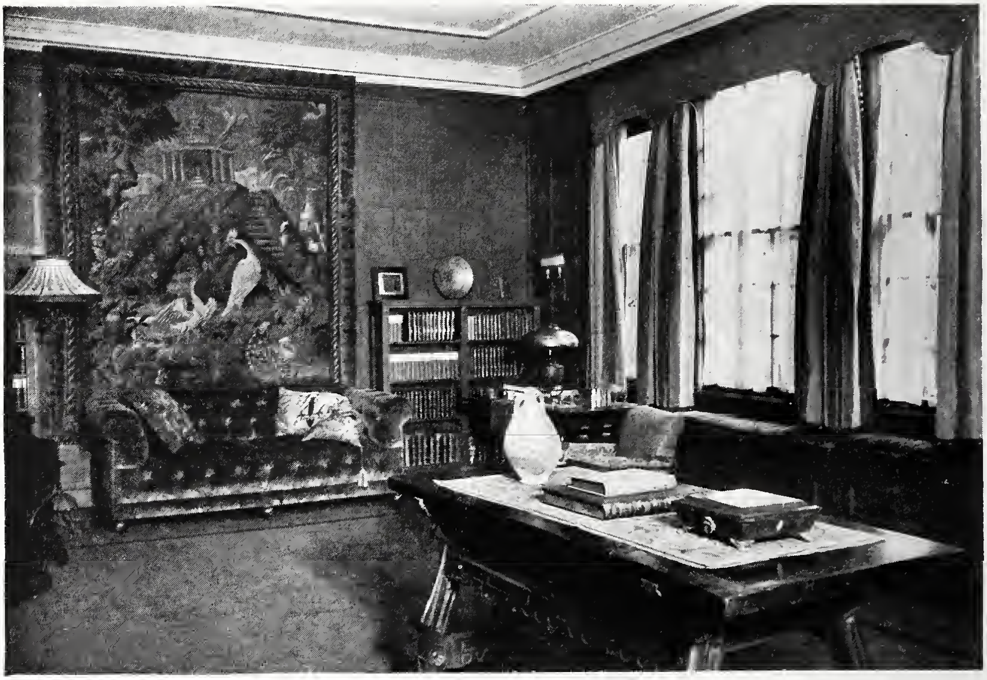
LOUNGE ROOM—BOB O'LINK GOLF CLUB, HIGHLAND PARK, ILL. BROWN & WALCOTT, ARCHITECTS.



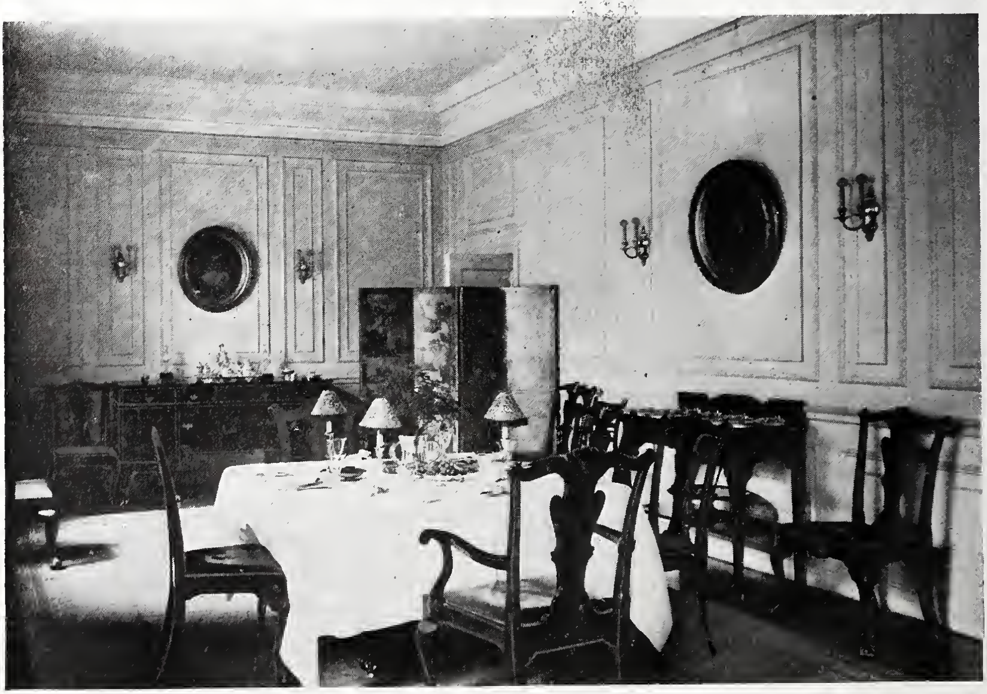
ENTRANCE DOOR—RESIDENCE OF THOMAS A. HOWELL, ESQ., NEW YORK CITY. KENNETH M. MURCHISON, ARCHITECT.



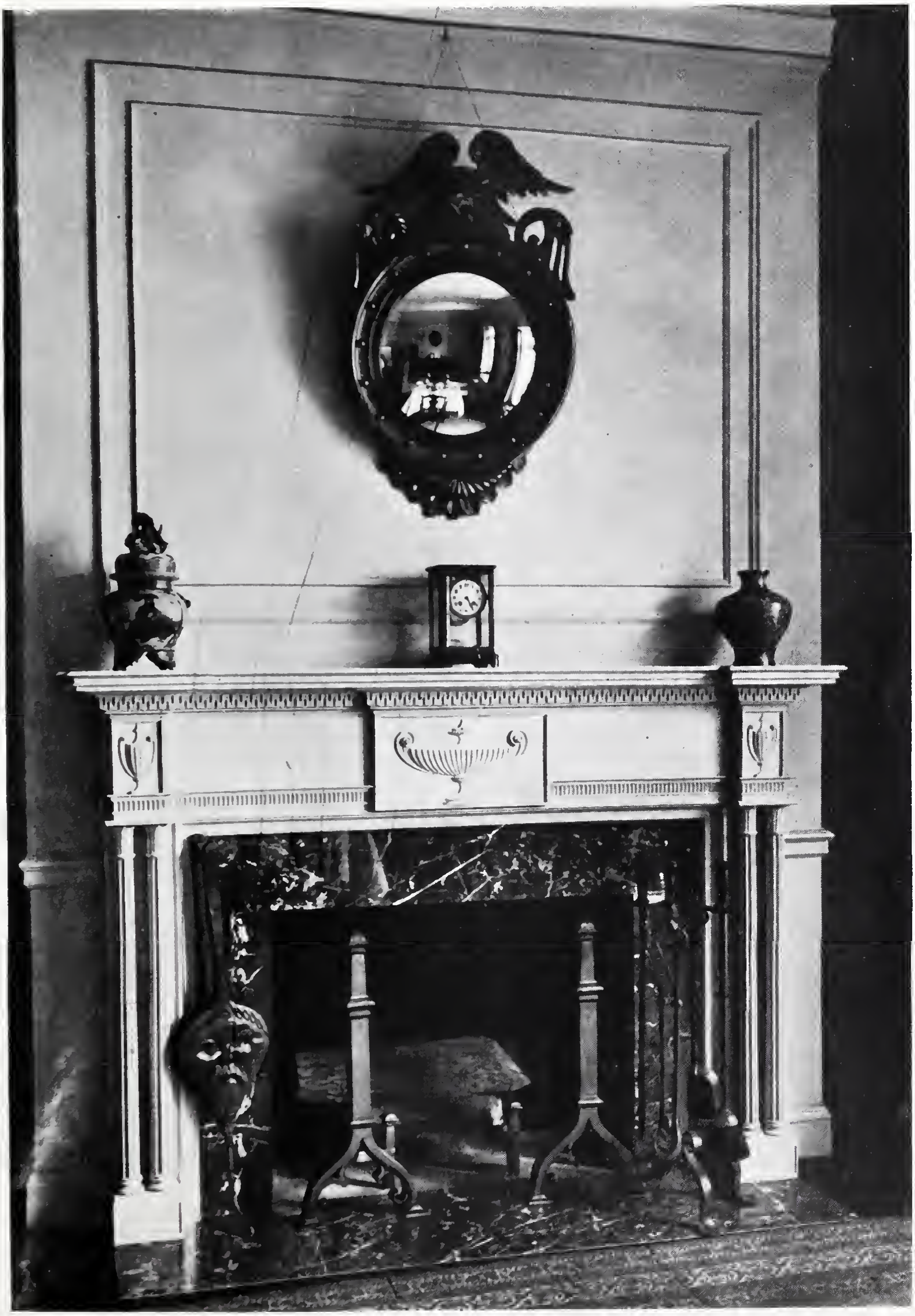
RESIDENCE OF THOMAS A. HOWELL, ESQ., NEW YORK CITY. KENNETH M. MURCHISON, ARCHITECT.



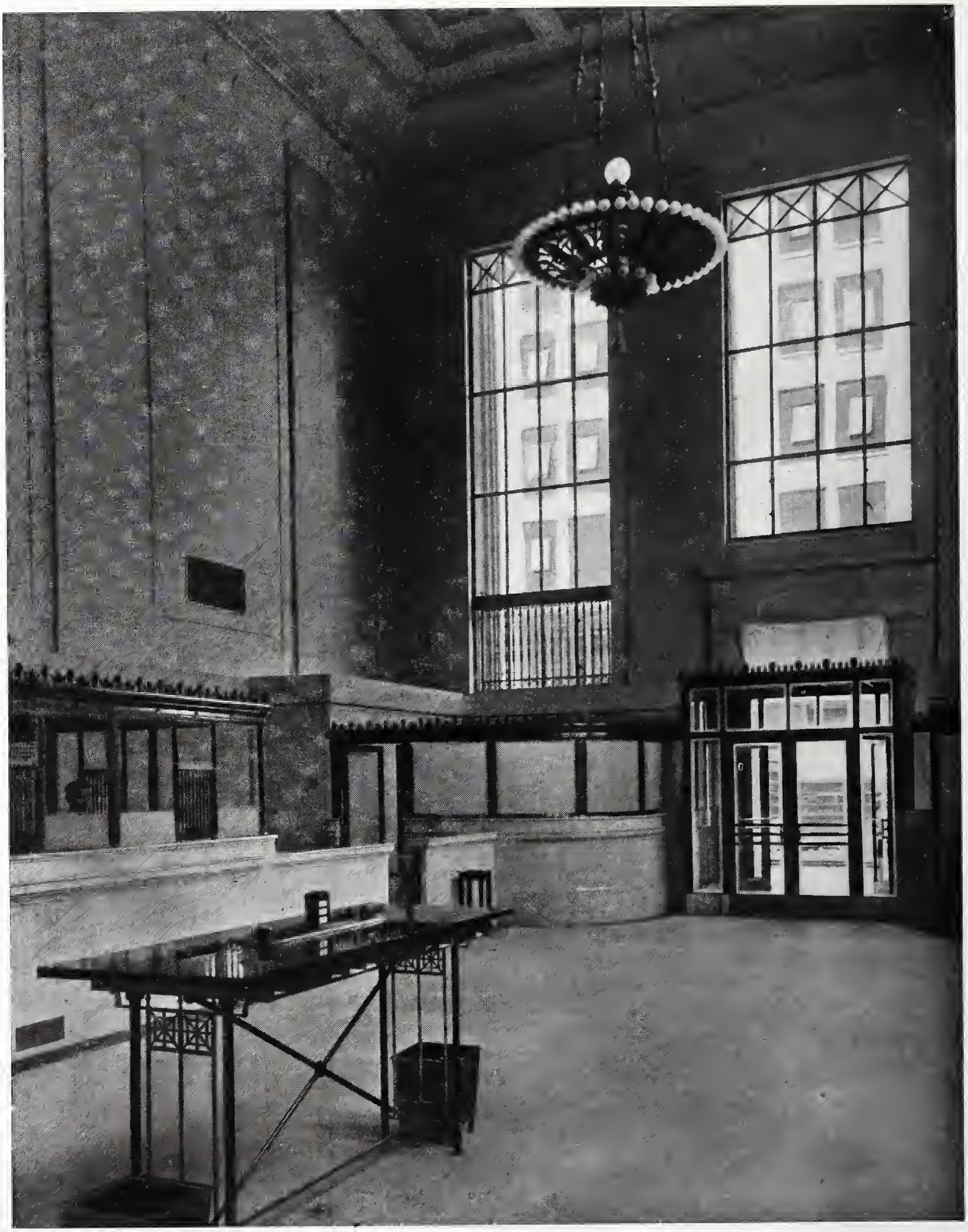
LIVING ROOM—RESIDENCE OF THOMAS A. HOWELL, ESQ., NEW YORK CITY.
Kenneth M. Murchison, Architect.



DINING ROOM—RESIDENCE OF THOMAS A. HOWELL, ESQ., NEW YORK CITY.
Kenneth M. Murchison, Architect.



DINING ROOM FIREPLACE—RESIDENCE OF THOMAS A. HOWELL, ESQ., NEW YORK CITY. KENNETH M. MURCHISON, ARCHITECT.



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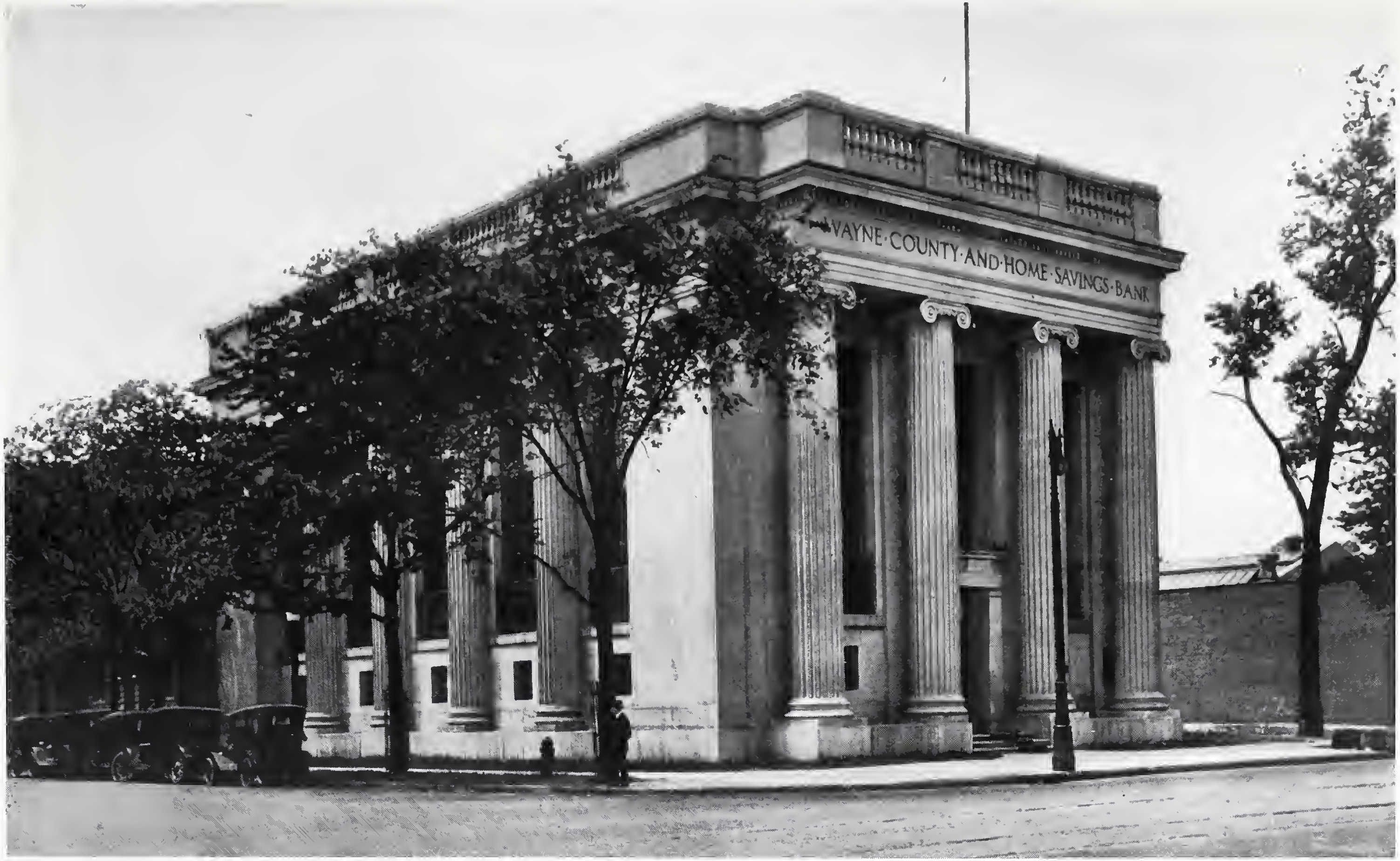

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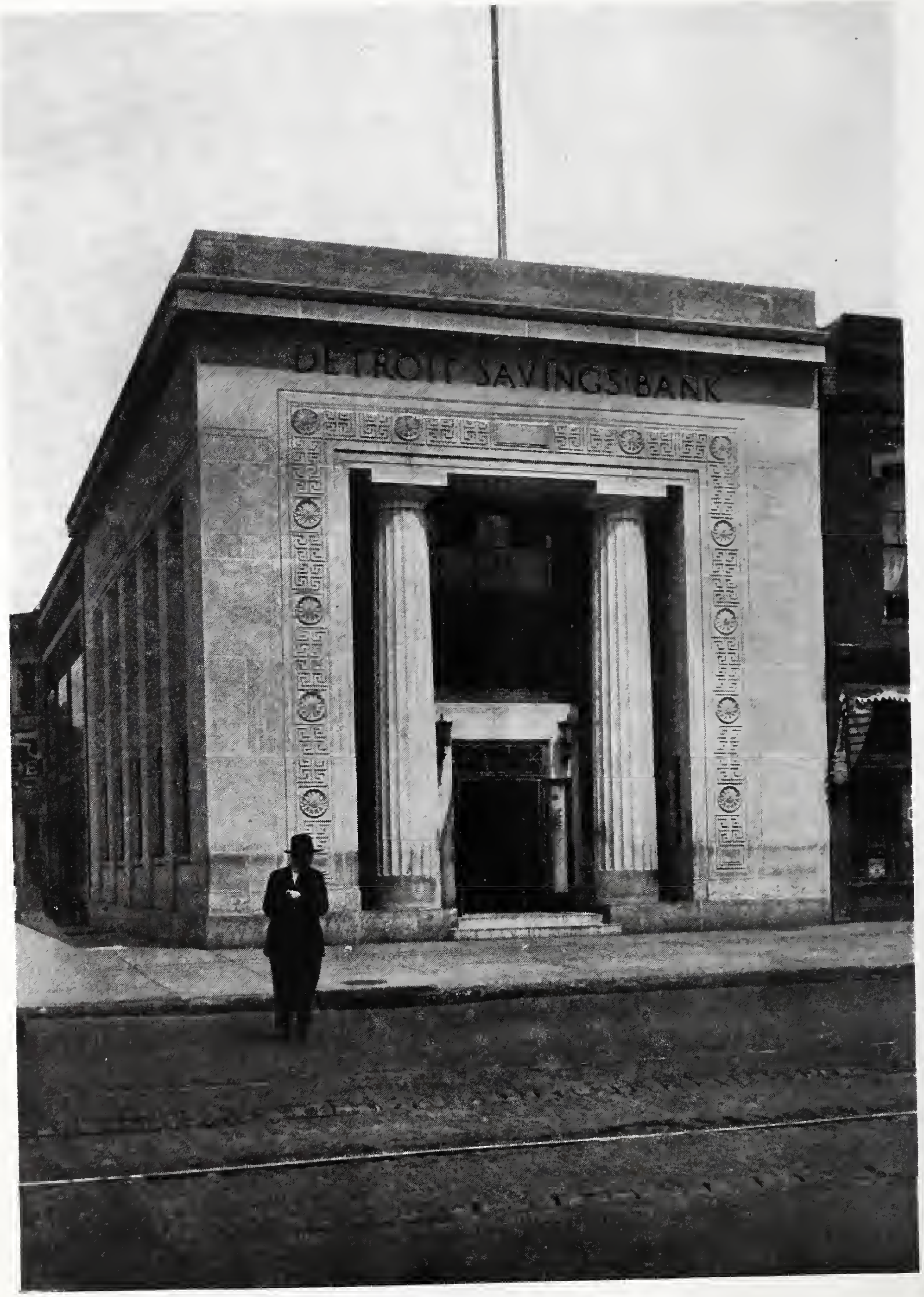

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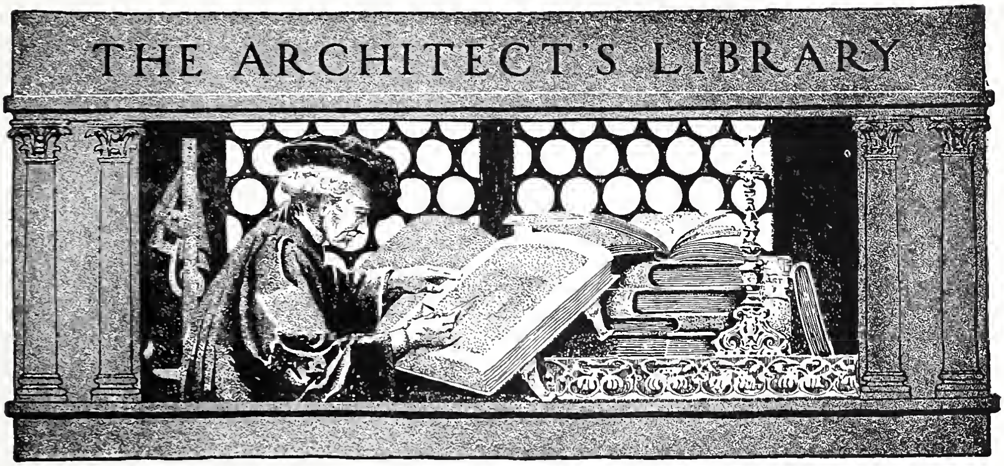


STUDIES ON ADAM AND BERNINI

By RICHARD F. BACH

Curator, School of Architecture, Columbia University

IN view of the steady development of a larger interest in our national Colonial heritage in architecture, an interest which—after many vagaries and a miserable period of misguided understanding and misinterpretation—is at last assuming a consistent form and following a channel of organic evolution, any book offering a thorough and exact, yet concise and well illustrated, examination of the work of Robert Adam and his associates has a particular bearing and indisputable value, for the so-called Adam manner was one of the fountain sources from which our early builders drew their inspiration, notably in the years from 1775 to the opening of the ill-begotten age of the Greek Revival. Such a book is that by John Swarbrick, entitled: *Robert Adam and His Brothers,* their lives, work and influence on English architecture, decoration and furniture (Quarto, pp. x + 316; and 224 illustrations. London; B. T. Batsford, and New York; Charles Scribner's Sons; 1916. $20.00).

The classic elegance of Robert Adam's Anglicization of the manner of Louis XVI, the careful study of actual ancient work which preceded his period of activity, the painstaking attention to every field of design that might illustrate his favored mode of expression, from mansion to mantel, from university buildings even to ladies' workbaskets—yet never with the least suggestion of a descent from sublime to ridiculous—and the vast territory covered by an enormous practice in which the design of buildings was but part of an interpretation of his style that affected every walk of cultured life—all of these factors together constituted a career of teeming activity that even in this era of crowded offices seems almost superhuman. In this we are reminded of that greatest of all careers in English architecture—namely, the career of Sir Christopher Wren. But unlike Wren, Robert Adam was in essence a good business man—indeed a rare type among artists. He was his own business manager, and we timidly aver that his convictions in the direction of the style with which he has been identified, as closely as Wren with his church towers or Vanbrugh with his alleged megalomania, had to thank this same business sense for much of their popularity. Nor is this an aspersion upon the honored profession of the art of architecture; had his style been in a sense thin or vapid or superficial, had he been insincere, had he fathered fads with regard only for cash returns, then we might fairly say that he had left an ugly smudge upon the fair name of a fine profession. But Robert Adam was qualified for the position of preëminence which he filled in English life of his time, a position which he carved out for himself, for we are of the opinion that many a great man—and Robert Adam among them—has not been satisfied to hide his light under a bushel, as the ideal artist is supposed to do, with an ill-becoming modesty, awaiting chance discovery, but has boldly cut out for himself a path to his own liking. There are too many fatuous tales of the young man, preferably starving, whose ability has long been wasted upon the ignorant observer or upon the chance bird that perched upon his window sill, of course to inspire him, until the fortuitous appearance of nobility that promptly opened the gates of another world. Such kindly fate fell to the lot of Grinling Gibbons, as we read in Sir John Evelyn's punctilious diary, and many hundreds of other able minds have by such means been led to improve the world by their works; while on the other hand a multitude have by the same channel found degeneration or ruin. Between the two stands Robert Adam, and with him a very limited company of others whose own ability or fortunes or both combined, guided by sense and forethought, have been sufficient to open the world like an oyster. It is in our humble estimation one of the saving graces of Adam's career that he was able to make good his own convictions—for he surely had strong ideas of style and design—on the basis of carefully laid plans for his own development; and be it said a benevolent Providence abetted his course and granted him a long head and a level one. All of this by way of preamble to Mr. Swarbrick's well-written book, within whose pages we must confess we have not found a similar attitude toward that great master's work. In fact, Mr. Swarbrick adopts no attitude at all, unless it be that of a sort of architectural Boswell.

The present volume begins with an introductory note on the classic influence in English architecture and furniture up to the time of the brothers Adam, stating the case completely, from Inigo Jones through every phase of influence from Italian and French and Low Countries sources, and their chief adherents and interpreters in England, to Lord Burlington, Stuart and Revett, the imported Italians—Leoni, Zucchi, Cipriani, and others—and finally the journeys of Robert Adam with Clérisseau to obtain the first hand familiarity with classic work that resulted immediately in the fine book on Spalatro, and formed ultimately the foundation of the Adam family's graceful translation of ancient motives for seventeenth century consumption. Then follow chapters on the work of the elder Adam and the early designs of the brothers, his sons; on the continental tour of Robert Adam and the latter's earlier work; the continental tour of James, the next in importance in this gifted family; and four sections on important architectural undertakings, namely, Lyon House and other contemporary work; Ken Wood, Bowood and Lansdowne House; Harewood House, Nostel Priory, Luton Hoo and Osterley; and the building of the Adelphi and certain contemporary events. Three later sections cover the period just preceding the American revolution, the years of the war itself and the time of Adam's erection of the Edinburgh University buildings and contemporary events. There are two copious indices, one for the text and a separate one for the 224 illustrations. The latter are of superb quality, but they are printed in with the text and not as separate plates; as a result the heavily sized paper required gives the volume an ungainly weight. However, we are willing to condone many sins in favor of good illustrations. The typography, binding and reproductions are well up to the accepted Batsford and Scribner traditions of quality. The text maintains the guise of a chronicle rather than that of a critical estimate or analysis; the men are not themselves studied, but their works are very carefully catalogued and an excellent impartial history is the result. It is sometimes a mark of sheer restraint and well managed good sense for an author to content himself with the entire elimination of his own estimates of the work of his subjects. Mr. Swarbrick's book will be of great historic value and we commend it without reservation.

II.

A work ringing clear with the sincerity of original study is that by Richard Norton entitled: *Bernini and Other Studies in the History of Art* (Quarto; pp. xii + 217, and 69 plates. New York; The Macmillan Company; 1914. $5), the publication of a gifted writer and leading authority, showing in the papers gathered together in this volume a breadth of understanding and a catholicity of appreciation compelling immediate attention, combined as they are in the present instance under the guidance of a trenchant critical faculty. As even a casual survey will prove, the book shows no deference to recognized opinnions if the author's findings lead him to disregard the critical dicta of those that have gone before; in fact, it will probably be some time before some of the opinions stated by the author will find general acceptance. As a result, these studies are endowed with a wideawake quality which is not the least of its virtues.

The volume offers first, three studies on Bernini, then three more under the general head: Aspects of the Art of Sculpture, and finally two more on Giorgione. The sculpture studies begin with an excellent discussion of the art of portraiture, presenting most valuable standards for judging either the painted or the carved portrait. By way of corollary to this discussion fine distinctions are drawn to indicate the subtle differences between realism in portraiture as expressed by Greek and later by Roman hands. In a separate chapter we are made acquainted with possibly suspected but not hitherto so plainly illuminated similarities between those two giants in sculptural art, Pheidias and Michelangelo; despite the centuries that separated them, certain fundamental inspirational qualities as well as indisputable marks of technical procedure surely were common to both. A further study on a head of Athena found at Cyrene gains particular interest because this distinct Athena type was discovered by the author himself in the course of excavations at Cyrene.

Giorgione is treated first from the point of view of the paintings generally attributed to him and second from the point of view of Mr. Norton's opinion of the true Giorgione, the ideal of the painter being attained largely through the agency of blue penciling traditionally accepted lists of Giorgione paintings and reconstituting the standing of the artist on the basis of the residue amplified by personal additions. Including copies, the process of revision leaves Giorgione no more than twenty-two pictures, among which are the Gypsy Madonna at Vienna, hitherto ascribed to Titian, an inadequately edited "Judgment of Solomon," and a head of Christ in Boston. Even the *fête champètre* at the Louvre is excluded, and with the criticism that it is at best "only fanciful and pretty, but in no way striking . . . . merely a perfectly charming *pasticcio.*"

However, the first third of the book dealing with Bernini is of greatest interest to us in this review. In no less than forty-three pages the author gives us an estimate of Bernini that is masterly. He reviews sympathetically Bernini's chief sculptural work and establishes the prodigious figure in the plastic arts of the seventeenth century—when both architecture and sculpture were plastic arts—as a serious and highly sensitive nature gifted far beyond even the high average of the Italian Renaissance and the most perfect period of richness that characterized its last great century. There are flung at us such words as these, for instance: "Why then find fault with Bernini and think he erred in doing what all the world found good . . . . why if the conventional and halting work of the nameless early artist is good, should the masterly work of Bernini be considered bad . . . . the antagonism Bernini arouses is due to the fad for the primitive and incomplete. The very lack of power that every early artist tried to rid himself of is now thought to be his chief value and grace, and as in the daily press a missing word puzzle attracts more attention than a sonnet, so the halting early work finds more admirers than the later perfect art."

The burden of this estimate of the late Renaissance master is of course guided by the appreciation of his sculpture, and it might be well to quote in this connection Mr. Norton's concluding paragraphs: "Such was Bernini, one of the great artists of the world. It is true that he was revolutionary, but he destroyed not through ignorance or envy. He destroyed merely that he might then create. The arts in his day were strangled by academic rules and had become cold and lifeless. The intensity with which he felt things gave him strength to break these bonds and to make sculpture once more a means of conveying living thoughts and emotions. He was like the butterfly which tears away the stiff-plated chrysalis before it can spread its wings in the free air. It is useless to try to explain his technical skill; he was born with it, just as others are born with a keen sense of colour or a musical ear, but it is certain that without it he could never have carved such figures as the Saint Theresa or the portrait of Fonseca which show intense emotion brought on by loss of all sense of self in the contemplation of the mystical meaning of the Passion. Such feeling could not be shown by restrained action and quiet faces. Much movement was necessary and the works are successful and beautiful because the feeling shown is perfectly simple and natural and not forced and put on for the sake of effect. Bernini's technical power made him, however, a bad master for others to imitate. Not that the work of his followers is any more inane than that of the copies of Michael Angelo or of those of any other great man, but his peculiarities were such as are at least superficially easy to see. Where he quite easily and simply distinguished between the appearance of silk or flesh, his imitators wasted their energies on elaborate arrangements, the only object of which was to show technical dexterity. Where he carved figures that are racked and torn with feeling, the imitators gave forms that are contorted and as unemotional as gymnasts. But he is not to be blamed for their work. By no means was he one of the blind leading the blind. He was the seer, the prophet, by odd chance honoured in his own home, whose visions were so believed by his followers that they vainly tried to see the like. What their eyes strained towards and failed to see, his heart yearned for and gained. To them praise was a prize to win, to him it was a spur to renewed effort and further advance. He had faults, as who has not, but they were due to his being a pathbreaker and having to find out for himself ways to carve and show figures such as no sculptor before him had ever dreamed of—they were not the faults of ignorance or stupidity. If it be well for us that we judge not lest we be judged, so, too, it is well, should we judge Bernini or other men, to judge not what there is in him of weakness or failure, but what there may be of noble intention and high endeavour. Doing this we shall see that Bernini, working always with bowed heart, but with uplifted spirit, broke down the middle wall of the partition between art and life."

This vigorous and enthusiastic estimate is followed by a chapter which makes a distinct contribution to the history of art by publishing a collection of clay models by Bernini, undoubtedly one of the most interesting records which has come down to us from the Renaissance. These models are of particular interest and value, because at that time sculptors carved directly in the marble by preference; witness above all the case of Michelangelo, who never used anything larger than a small wax model even for his figures of heroic size. Full size models may have existed in many cases, of course, but being of no use after the work was executed, and being themselves of more or less perishable material, they have not come down to us. Thus the present collection of Bernini's models, the precise origin of which is not known, achieves a particular value for the study of Renaissance architecture.

The final study on Bernini deals with his designs for the piazza or atrium before Saint Peter's, and is based upon the fourteen sheets of the architect's very careful pen and ink sketches, which are in the Brandegee collection in this country. Mr. Norton believes that a study of these drawings will show quite distinctly that the present form of the piazza of St. Peter's is due to no mere thoughtless and haphazard erection of colonnades and fountains, but is the result of a deeply considered plan and illustrative of a very large idea. In fact the drawings seem to show that Bernini's circular piazza itself was intended to represent the world at large, while the colonnade symbolized the arms of the cross; this idea is actually developed in the sketches.

Mr. Norton's book is in every sense a contribution in its triple field. It will do—indeed, has done—much to establish Bernini in his proper position according to revised standards. It will undoubtedly make necessary a new and more careful weighing of the facts in regard to Giorgione, and it will in general cast a gratifying light upon sculpture, both Greek and Italian Renaissance. The text is splendid, in a compelling style; the illustrations, of which there are sixty-nine, are worthy to keep it company.

NEW BOOKS ON ARCHITECTVRE AND ALLIED ARTS RECEIVED FROM THE PVBLISHERS

Spanish Architecture of the 16th Century. By Arthur Byne and Mildred Stapley. 80 plates, 140 ills., 430 p., 7 by 10½ inches. New York: G. P. Putnam's Sons.

The Substance of Gothic. By Ralph Adams Cram. Six lectures on the development of architecture from Charlemagne to Henry VIII. 200 p., 5½ by 8 inches. Boston: Marshall Jones Company.

The Italian Orders of Architecture. A practical book for the use of architects and craftsmen, consisting of letter press, with 32 plates, based on the orders of Vignola, Palladio, Gibbs, Chambers and other masters. By Charles Gourlay, professor of architecture and building in the Royal Technical College, Glasgow. 9½ by 12½ inches. New York. Longmans, Green & Co. $2 net.

The Museum. By Margaret Talbot Jackson. 7 ills., 280 p., 7¾ by 5 inches. New York: Longmans, Green & Co. $1.75.

The Livable House; Its Plan and Design. By Aymar Embury II. Many ills., 198 p., 10 by 7 inches. New York, Moffat, Yard & Co. $2.50.

Domestic Architecture. By L. Eugene Robinson. 50 plates, 378 p., 7½ by 5 inches. New York: MacMillan Co. $1.25.

Better City Planning for Bridgeport. By John Nolen. Many photographs, surveys, maps, diagrams and plans, 159 p. 12 by 9 inches. Pittsburgh: Pittsburgh Architectural Club. $1.

How to Make Concrete Garden Furniture and Accessories. By John T. Fallon. Many ills., 105 p., 10 by 7 inches. New York: Robert M. McBride & Co. $1.50.

Modern Theatre Construction. By Edward Bernard Kinsila. Large type edition. 41 p. of ills. and copious marginal reference notes; 266 p., 7½ by 5 inches. New York: Chalmers Publishing Co.

The Elements of Graphic Statics. By Ernest H. Sprague, A.M.C.E. 200 p., with worked examples and 163 ills., 4½ by 7½ inches. A text book for students, engineers and architects. The Broadway Series of Engineering Handbooks. New York Agents: The D. Van Nostrand Co. $1.50 net.

The Studio Year Book of Decorative Art. A review of the latest developments in the artistic construction, decoration and furnishing of the house. 148 p., many ills., 12 by 8 inches. New York: John Lane Co. Paper, $2.50; cloth, $3.

WAR BOOKS OF THE CATHEDRALS

By BARR FERREE

I.—REIMS

THE student of the French cathedrals may well be taken aback at the books which will crowd his shelves should he attempt to keep in touch with the very considerable literature that, almost from the beginning of the Great War, has grown up around the injured cathedrals or which is concerned with the cathedral cities included within the war zone.

No cathedral has produced so copious a literature as that of Reims. This is due not only to the overwhelming grandeur of the building, but more particularly to the utter maliciousness of its ruin. One may almost go so far as to state that anything relating to Reims has interest. Naturally, therefore, Reims has inspired the most sumptuous publication of the war, *La Cathédrale de Reims.* (Paris: Libraire Centrale des Beaux-Arts.) This is a magnificent book, planned to consist of nine parts, of which eight have reached the United States. The parts thus far published consist of illustrations only, exquisitely fine heliogravure plates after photographs; the introduction and notices by M. Paul Vitry (Conservateur adjoint des Musées Nationaux) not having yet appeared. The plates include an enormous number of details, the sculpture being reproduced, often on a large scale, to a quite unprecedented extent. The photographs from which the plates are copied are obviously the finest obtainable.

The same publishers have also issued *La Cathédrale de Reims,* by M. Etienne Moreau-Nélaton. It includes a hundred and thirty-six plates of illustrations reproduced in good style. The last few plates show some of the damages wrought by the early bombardment. The Passion of Reims now takes its permanent place in the illustrated literature of the cathedral. A more serious work is *La Cathédrale de Reims*: *une œuvre française* by M. Louis Bréhier (Paris: Laurens), professor in the University of Clermont. If the illustrations are less ornate, they are numerous and adequate. M. Bréhier devotes the larger part of his work to a discussion of the sculptures of the cathedral; his treatment of the glass, which has almost wholly disappeared in the bombardment, seems inadequate. A useful little book, but handsomely illustrated, is *Reims: La Cathédrale,* by J. Mayor (Paris: Editions d'Art et d'Histoire). The author rapidly summarizes the history and description of the cathedral, and offers his text chiefly in the form of descriptive notes opposite his admirably reproduced illustrations. While the world interest in Reims needs no new demonstration, reference may be made to an Italian book on the cathedral, *Intorno ad una rovina. La Cattedrale di Reims e l'Arte Gotica in Francia* (Rome: Voghera, 1916) by Gino Modigliani.

These books are concerned with the cathedral of Reims as a whole, and with but secondary reference to the results of the bombardment. A very formidable list of books treat of the cathedral from this latter point of view. In this group first rank is taken by *Les Allemands destructeurs de Cathédrales et de Trésors du Passé* (Paris: Hachette, 1915), published without author's name, but subsequently attributed to M. St. Georges de Bouhélier. The author treats of devastations at Reims, Arras, Senlis, Soissons, etc., and gives photographs of bombarded structures and reproduces many notable documents. A temperate discussion of a very hideous record. The book entitled *Ce qu'ils ont détruit. La Cathédrale de Reims bombardée et incendiée par les Allemands en septembre,* 1914, by A. Demar-Latour (Paris: Les Editions pratiques et documentaires), deals almost exclusively with the bombardment and is an excellent summary of the first misfortunes of the cathedral. The brief book by Eugene Mercier, *Notre Dame* *de Reims,* summarizes the intent of the sculptures and describes the devastations. More pretentious than these is *Reims et la Marne. Almanach de la guerre,* 1914-1915 (Matot, Reims, 1916). It contains a vast quantity of interesting material, including chapters on the German occupation of Reims in 1914, notes on old Reims, the bombardment and burning of the cathedral, life in Reims during the war, and other papers dealing with matters in the Department of the Marne. *La Guerre et les Monuments,* by M. Lucien Magne (Paris: Berger-Levrault), treats of Reims and Arras and the ruined cities of Belgium. *Les Villes Martyres de France et de Belgique* (Paris: Payot), by M. Marius Vachon, treats of the devastations in Reims, Soissons, Senlis, Arras and other towns in France, as well as in many places in Belgium. *Le Livre de Souvenir,* by MM. Paul Ginisty and Arsène Alexandre (Paris: Flammarion), covers somewhat the same field, but in a wholly different way. It is offered as a *Guide du voyageur dans la France envahie en* 1914 and supplies a trustworthy guide to destruction in Reims, Meaux, Senlis, Soissons and other places. The beautiful sketch, *La Cathédrale de Reims,* by M. Emile Mâle (Paris: Bloud & Gay, 1915), has, like all other recent books on Reims, been inspired by the bombardment.

The books thus far noted have more or less architectural character; but there is a host of other publications, written more particularly from the military standpoint or that of the general traveler, in which references to the cathedral are more or less meagre, but which have their rightful place in a list of war books of the cathedrals. *Among the Ruins* (London: Heinemann), by Gomez Carrillo, a Spanish journalist, and published also in Spanish and French, contains a chapter on Reims, as well as one on the battlefield of Verdun, with references to Meaux and Nancy. *With the Allies,* by Richard Harding Davis (New York: Scribners), contains chapters on the bombardment of Reims and the battle of Soissons. Rudyard Kipling's *France at War* (New York: Doubleday) includes some notes on Reims, as do *Over There,* by Arnold Bennett (New York: Doran); *The Spirit of France,* by Owen Johnson (Boston: Little Brown); *The Campaign of* 1914 *in France and Belgium,* by G. H. Perris (New York: Holt); *At the Front with Three Armies,* by Granville Fortescue (London: Melrose); *Behind the Scenes at the Front,* by George Adam (New York: Duffield), with notes on Laon, Verdun, Nancy, Soissons and Senlis. Lord Northcliffe describes his visits to Reims in his book, *At the War* (New York: Doran), as does Judge Grant in his little book, *Their Spirit* (Boston: Houghton Mifflin). Walter Hale's book, *By Motor to the Firing Line* (New York: Century), offers more substance in description, and is embellished with some of the author's fine etchings. In addition to Reims he visited Amiens, Arras, Nancy, Soissons and Verdun. Wadsworth Camp describes a visit to Reims in his *War's Dark Frame* (Dodd).

French books in the same class include M. Marcel Dupont's *En Campagne,* 1914-1915 (Paris: Plon-Nourrit), with an account of a visit to Reims. *Pendant l'Orage,* by Remy de Gourmont (Paris: Mercure de France), offers some notes on Reims. 1914 *Près de la Guerre,* by Georges Wagnière (Geneva: Jullien), describes the observations of a Swiss journalist at Reims, Verdun and elsewhere in France. *Lettres de France,* by F. Chavannes (Lausanne: Tarin), consists of letters written to the "Gazette de Lausanne." A third Swiss journalist, M. Benjamin Vallotton, has gathered another group of letters to the same newspaper in his *A travers la France en Guerre. Souvenirs d'Alsace* (Lausanne: Rouge).

More elaborate than these is *Reims,* (1*er Aout*—31 *Decembre,* 1914), by Jules Poirier (Paris: Payot), consisting of a daily journal of life in Reims and the bombardment for the first five months. A somewhat similar task is the personal diary of Mlle. Clotilde-Jehanne Remy in her *Sous les Bombes* (Paris: Noël), of which two volumes have appeared, bringing the story down to February 26, 1916. The most considerable publication in diary form is *Le Martyre de Reims*

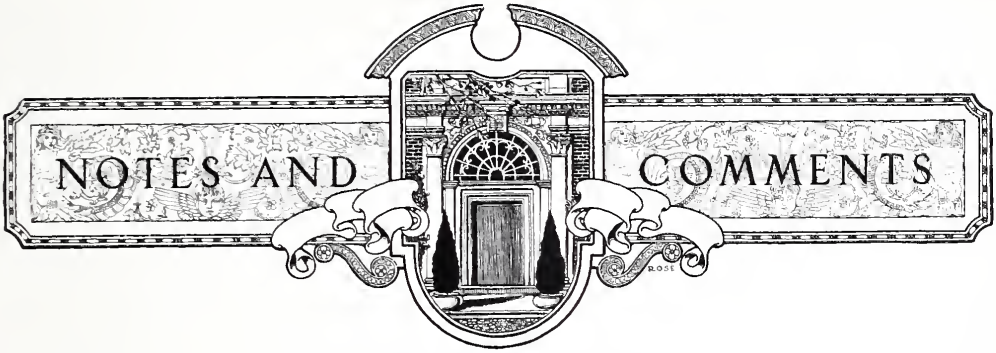
(Paris: Etienne), written, for the most part, by M. Pierre Bienvenue and published in parts; it was discontinued with Part 41. It undertook to describe daily events in Reims throughout the bombardment, giving details as to the buildings injured and the names of persons killed or wounded. The censor and the shortage of paper combined to suppress this useful publication at too early a date. Another notable diary is the *Journal d'un Rémois,* by M. Henri Jadart, Librarian and Curator of the Musée de la Ville de Reims. Printed in the sumptuous publication *Les Champs de Bataille,* 1914-1915; *Les Cités Meurtries* in the *Collection du Tour de France,* edited by M. Octave Beauchamp, it covers the period from September 3 to October 6, 1914, and presents a graphic picture of the first days of the bombardment. The story is continued by Mlle. Alice Martin in *Reims sous les obus en* 1915; also included in the same publication. This series of *Le Cités Meurtries* also includes parts on Senlis, Meaux and Arras, all beautifully illustrated. *Sous les Obus et dans les caves* (Paris: Beauchesne), by Mlle. Martin, tells the story of the bombardment in 1914.

Of miscellaneous books mention should be made of the two volumes of *Les Cahiers Vaudois, Louvain-Reims* (Lausanne: Tarin, 1914-1915), reproducing many protests against the bombardment of the cathedral. A somewhat premature discussion of restoration is treated by Mgr. Lucien Lacroix in his *Faudra-t-il restaurer Notre Dame de Reims*. (Paris: Bloud & Gay, 1915). *L'Ame de la France à Reims* (Paris: Beauchesne, 1914) is an eloquent sermon by Mgr. Baudrillart inspired by the destruction of the cathedral. Facts and documents relating to the bombardment are brought together by "Vindex" in *La Basilique dévastée* (Paris: Bloud & Gay); and the crimes of the first bombardment are described by Diego Angeli in his *Reims e il suo Martiro* (Milan: Treves), in three letters originally published in the *Giornale d'Italia. Les Cathédrales de France devant les Barbares,* by Jean de Bonnefon (Paris: Societe d'Editions), contains brief sketches of the cathedrals of Reims, Soissons, Laon, Senlis, with drawings by Gautier de Soucy.

Of the innumerable magazine articles relating to the cathedral, none of which can be avoided by the collector of contemporary material, there is but space to speak of one or two only. *The Martyred Towns,* treating of Reims, Soissons, Senlis and Arras, by M. André Michel, and originally published in the *Revue Hebdomadaire,* has been translated into many languages that all the world may read of these architectural catastrophes. The magazine, *L'Art et les Artistes,* consecrated a special number to *La Cathédrale de Reims,* handsomely illustrated and with text by M. Camille Enlart. A later issue dealt with *L'Art Assassiné* with text by M. Camille Mauclair, and describes the general devastation throughout France, as well as at Reims.

Of poems the first place is unquestionably held by *Les Cathédralés* (Paris: Libraire Théâtrale, Artistique and Littéraire), the dramatic poem written by M. Eugène Morand for Mme. Sarah Bernhardt. *Sauvons la Cathédrale de Reims,* by Camille Le Senne (Paris: Editions & Librairie), includes both prose and poetry. *La Sublime Epopée,* by A. Chagneau-Saintipoly (Paris: La Renaissance du Livre), contains a poem on Reims. Others are *A la Gloire de Reims,* by M. Marcel Sézanne; *La Cathédrale de Reims,* by M. Paul Fort; *Ma Cathédrale,* by M. H. Richardot, and *L'Ange brisé,* by M. P. Antony-Thouret, inspired by the ruin of the famous statue known as the "Smile of Reims."

Of German books but one has escaped to America; this is the astonishing pamphlet *Die Beschieszung der Kathedrale von Reims* (Berlin: Reimer, 1915), issued by the Ministry of War, as explaining and excusing the bombardment of the cathedral. The war literature of Reims has been admirably summarized by M. Henri Jadart in his *Bibliographie Rémoise,* published originally in the *Travaux de l'Académie de Reims,* but also issued separately. It lists books and pamphlets only, omitting specific references to magazines.



NOTES AND COMMENTS

The Boston Exhibit.

The annual exhibition of the Boston Architectural Club, held in November in Rogers Hall, showed evidences of the heavy burden laid by the war on the professions of architecture and landscape architecture. The organizers of the show were confronted by a very real obstacle at the start; if they had charged an entrance fee to a public contributing to war expenditures of all kinds they would have had practically no visitors at all. Not only was this means of financial support missing, but any great outlay for decorations seemed hardly advisable, either on the part of the club itself or on the part of the Boston Society of Landscape Architects, which shared in the exhibit. In the list of exhibitors some well-known names were absent altogether, which was not strange when so many architects have gone into the army or are doing Government work.

All this does not mean that the Boston exhibition was not successful, was not worth a visit. The promoters are to be congratulated for doing so well under the trying conditions, and their example should encourage other societies to maintain their exhibitions as long as patriotic necessities will permit. Indeed, it might be suggested that a considerable section of a show be given to displaying the varied war work performed by architects—map drawings, cantonment projects, or some of the new housing schemes that the Government is said to be contemplating for workmen.

One of the most interesting exhibits was the model of a large tuberculosis hospital designed by H. F. Kellogg, contrived of cardboard elevations roughly rendered and pasted together, evidently made in the architect's own office. Simple means of showing clients what to expect in the appearance of designs are worth study, for too much elaboration in models and perspectives is a great waste. As for Mr. Kellogg's design itself, it was a fine effect of well-contrasted groups of roofs and fenestrations combining early American motives, used in the bold, sure composition of the Beaux-Arts, without losing the scale or the refinement of our native style. Another building was one in a group of the Rice Institute, Texas. In the contrasts of the many arches with the great arch of the entrance passageway, Cram & Ferguson have produced a rarely vigorous and decorative and imaginatively composed work. Though some might find details in it not to their liking, it is refreshing beside the insipid correctness of which we have such a surfeit. Of the smaller works, the house shown by Harry B. Russell is a remarkable example of that bold, striking originality—yet well-reasoned good taste—that Boston occasionally produces. There was a hallway in the house, of tile floor and plain brick walls, decorated with a single strongly modeled round picture frame, and with the light cutting across the dark brickwork down from an immense window on one side of the hall. Even more astonishing appeared the dining room, most simply furnished, again with tile floor and brick walls, one of the few cases where brick has been successfully used in an interior. Such a design seems to point into the future, and its value is not lessened by the query as to whether it would appear too sombre and too bare the year round; assuredly it would not so appear to natures which eschew the luxurious and the pretty for the essential.

The landscape architects had a good exhibit, as was to be expected from the strong group in Boston. Here again the ravages of the war were apparent, for Olmsted Brothers carried most of the burden in a fine exhibit. Harvard and

Technology were there, with Technology the more sober and Harvard the more French, a situation not without humor, for it was not always thus. Besides these school exhibits was a beautiful drawing that bore the title, "René Mailand, winner of the Grand Prix de Rome, 1913, killed at Verdun." It bore witness to the price that civilization must pay to barbarism.

A fine feature of the Boston exhibition was the arts and crafts room—activities suited to New England and fortunately increasing there. Here one could admire the vigorously designed and richly colored pottery and tile, the jewelry and wrought iron hardware; also the splendid silverware of Boston, reviving creatively, not imitatively, the traditions of Paul Revere.

Such exhibiting is good, not for the public's "education" alone, as Arthur Shurtleff explained in a quietly humorous address before the Boston Society of Landscape Architects, but for the good that each individual architect derives when he spots his designs alongside others up on a wall. There his work appears somehow less imposing than on the drawing board in his own office, and faults before unnoticed or glossed over reveal themselves to him in grim rebuke.

JOHN T. BOYD, JR.

Zoning.

Districting, or zoning—as it has come to be known in city planning parlance — implies the limitation by law of certain regions of a city to certain specified industrial, manufacturing, residential or other well defined purposes, and the consequent segregation of factories and public buildings, as well as other distinct types of edifices, with the necessarily resultant limitation of their heights and areas. There remain, of course, the obvious exceptions of schools and churches and the like, which are not physically detrimental to residential districts, and several similar reservations.

In a recent annual report, the Philadelphia Housing Association has published an admirable summary of the case for scientific districting in these few paragraphs: Zoning recommends itself because—

It gives stability to property values; prevents deterioration of neighborhoods with the attendant wastes; allows for necessary changes, but prevents those of a shifting character.

It segregates obnoxious trades, preserves the character of residential areas and stimulates the use of natural advantages for the purposes for which they are best adapted.

It simplifies traffic regulations and expedites transit; by the distribution of homes and the encouragement of the erection of private dwellings, it tends to eliminate congestion by distributing the population.

It segregates factories along natural or artificial traffic lines and conduces to economy in industry. While providing for the general well being of the public, it improves the living conditions of the workers and aids in reducing the cost of living.

It reduces the amount of insanitation and attendant dangers, thereby making for public health. It establishes more equitable housing standards. It contributes to the beauty of the community and aids in the economical administration of municipal government.

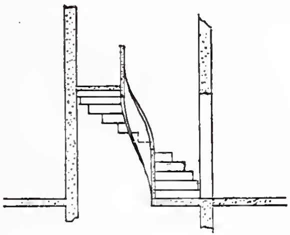
In these pithy sentences we have the entire gist of the zoning question very capably summed up. If these facts, thus succinctly stated, could be brought to public notice the benefits of zoning would no longer be among the poorly understood aspects of city planning.

RICHARD F. BACH.

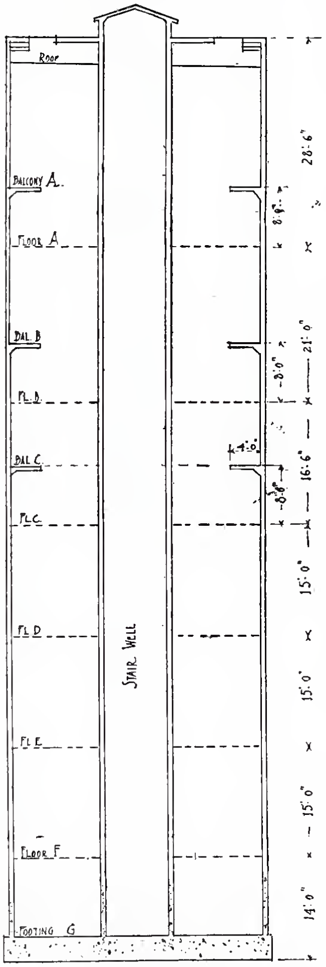
The Southwest Museum Again.

In emendation of our notice in the July issue of the Architectural Record concerning the Southwest Museum at Los Angeles, the following matter may prove of interest. The problem of silhouette treatment automatically became the dominant note in the design of the building, for the reason that requirements of site and approaches from all directions demanded a satisfactory first impression as seen from a distance. Therefore the mass composition of the structure, as apart from the detailed treatment of each component of the design, retains its importance until the spectator is at fairly close range. As a consequence the effect of exterior color became a secondary consideration; and this especially because of the entirely accessory and unqualified effectiveness of exterior color in Mission and old adobe buildings characteristic of the Southwest. When the actual color texture was finally determined upon a dark cream, approaching tan or écru, was found most satisfactory.

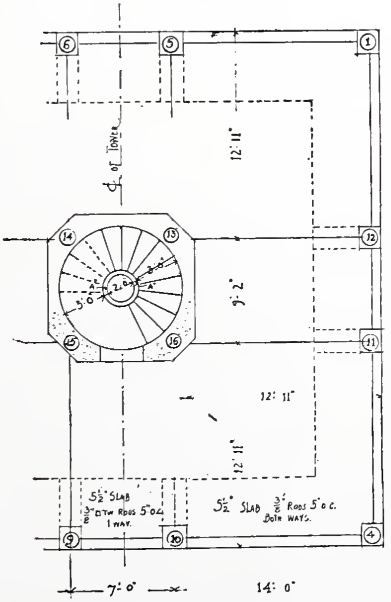
SOUTHWEST MUSEUM : LOS ANGELES :
MESSRS. SUMNER HUNT AND S. R. BURNS, ARCHITECTS,
~ LOS ANGELES ~



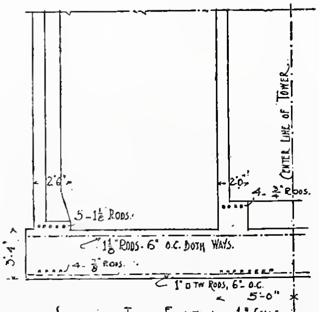
TYPICAL RUN OF STAIRS.



TOWER SECTION - 1/8" SCALE



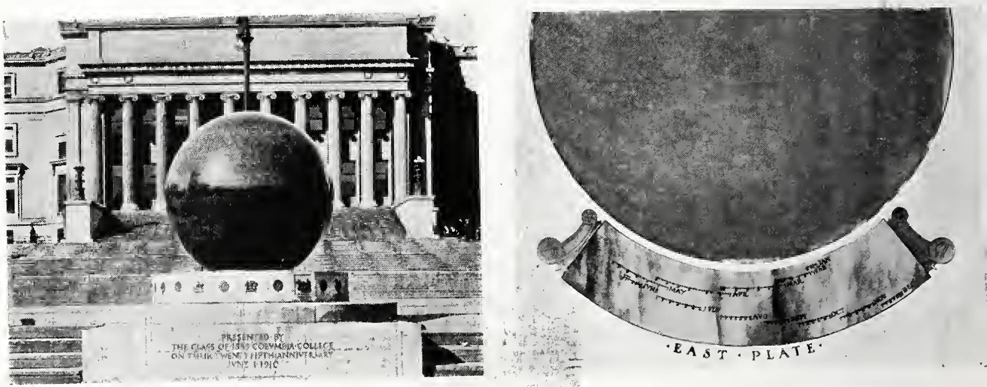
TYPICAL PLAN OF CARACOL TOWER AND STAIRS ~ 1/4" SCALE.



SECTION OF TOWER FOUNDATION ~ 1/4" SCALE.

In the construction of the helical stairway, which is housed by the caracol tower, metal forms were used for the central or well section and wooden forms for the exterior section. The inner or metal forms were two in number, measuring respectively two feet and two feet eight inches in diameter, the outer of the two shaped to conform to the rise of the stairs. These metal forms, which were used for building only the well hole or rail side of the helical concrete stairway, were not of great length and were used as units raised from time to time as the work progressed. It will be remembered that the caracol tower, rising to a height of about 125 feet, is carried on a solid slab of concrete thirty-six feet square and slightly less than three and one-half feet thick, reinforced both ways. The work will contribute largely to the advancement of concrete as a building material and will, above all, aid in establishing an attractive tradition of modern buildings in emulation of the one-time architectural charm of the Missions.

Richard F. Bach.



SUN-DIAL, WITH DETAIL OF PLATE, AT COLUMBIA UNIVERSITY, NEW YORK CITY.

A Granite Ball as a Sun-Dial.

A granite ball, weighing fifteen tons, which stands on the campus of Columbia University, New York, forms a unique sun-dial. The ball casts a great oval shadow on the base supporting it, and it is from the moving edges of this shadow that the time is ascertained. There are really two shadow edges, and for this reason two bronze time plates, an east and a west plate, are necessary; one for each shadow.

Old-time sun-dials indicate solar time; modern watches and clocks show standard time. The two kinds of time differ very irregularly throughout the year, the difference in New York City being sometimes as great as twenty minutes. In order, therefore, that the Columbia dial should be a really accurate timekeeper, it was necessary to make it keep both standard and solar time. As this renders the dial a complicated affair, it was constructed to indicate time once only each day, at the moment of noon, New York standard time.

The method of using the dial is shown by the diagrams of the east and west plates. Each of the dial plates has twelve concentric circular arcs engraved upon it, one for each month. Upon these circular arcs various dates in the several months are marked by small holes. To read the dial on any date, as for instance, July 4, one notes where the shadow edge cuts the hole marked 4 on the July circular arc. It will then be noon by standard time.

As it would have cumbered the plates with too many numbers to engrave on them all dates of the year, some of the intermediate dates of each month have been omitted. To use the dial on these dates it is only necessary to interpolate an engraved number and hole, suitably placed on the proper circular arc between two engraved dates.

Robert H. Moulton.

The very interesting residence of C. Studebaker, Jr., at South Bend, Ind., shown in Figs. 67, 68 and 69 in Prof. Hamlin's article on "The American Country House," last October, was designed by Green & Wicks. Ralph M. Weinrichter was the landscape architect for the property, which is known as Elm Court.

February 1918

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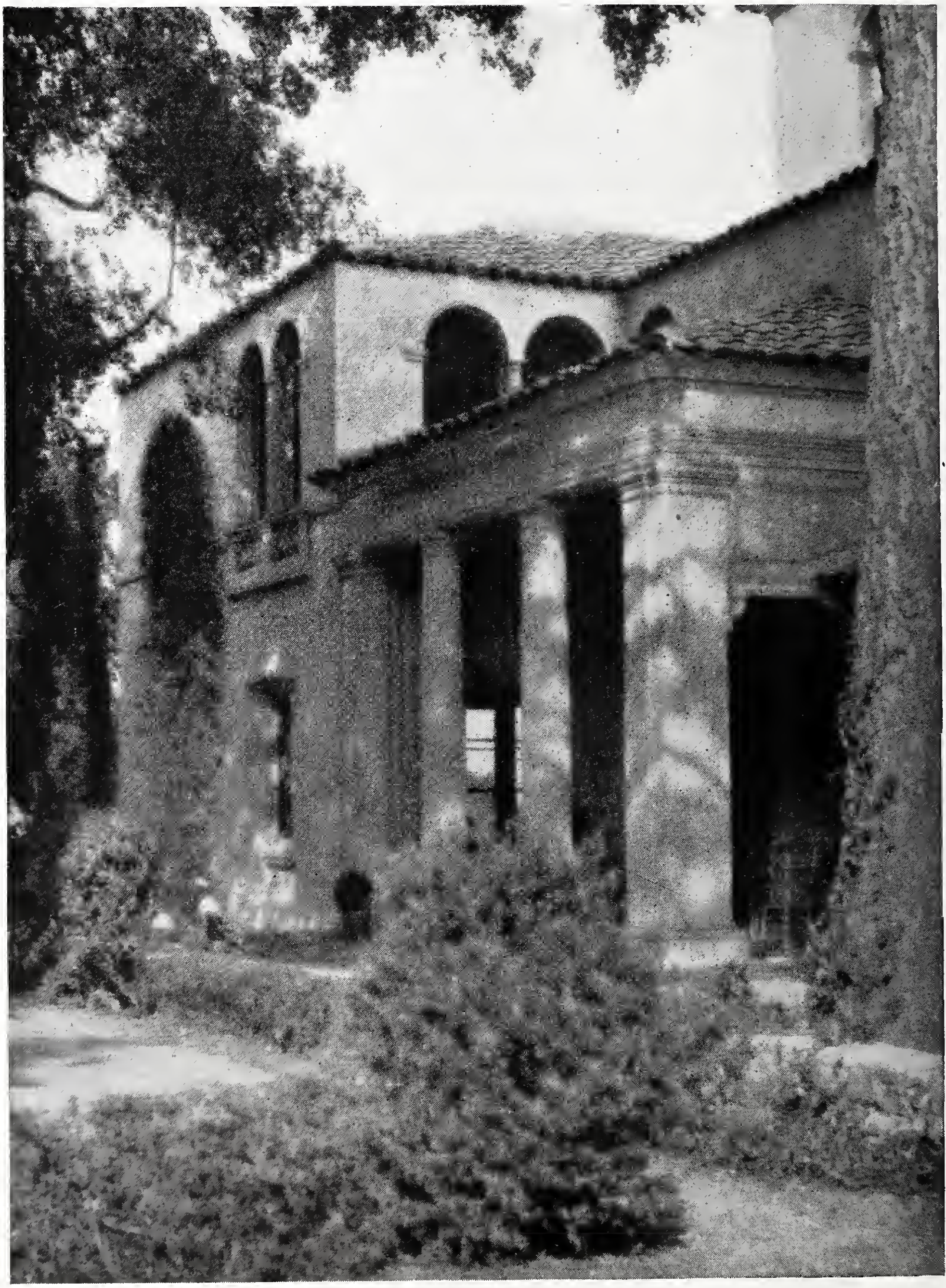


Photographs by Francis Bruguiere.

PORCH AT MAIN ENTRANCE FROM THE WEST GARDEN—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.

THE
ARCHITECTVRAL
RECORD

VOLVME XLIII NVMBER II

FEBRVARY, 1918

The RESIDENCE OF CHARLES D. BLANEY, *Esq.*

— SARATOGA, CALIFORNIA —

WILLIS POLK & Co. ARCHITECTS

By MacDonald W. Scott

UNLESS architecture corresponds with natural environment one of its fundamentals is violated. To incorporate the spirit of natural surroundings in his work, the architect, no less than the artist or the poet, must breathe inspiration from environment.

These truths explain why every attempt to introduce Colonial architecture into California has met with failure. They explain why the Mission, characteristic of the Southwest and of California, is in a false position when attempted where deciduous trees flourish and where the grass is green in the spring, summer and autumn. Spanish and Italian influences continue to predominate in the best of California houses. It is true that there are some notable examples of French and English architecture in California, but they are and always will remain sadly out of place.

The architect and the artist can build only on the foundation which nature has laid. So it happens that on the San Francisco peninsula and in the delightfully diversified district which reaches a hundred miles or more southward from the city, there are coming into being country homes that, with few exceptions, reflect Italian or Spanish influences, with here and there modifications to suit the peculiarities of the site and to meet an ideal expression of the architect. The district, owing to its rolling, hilly or mountainous character, demands careful study if originality is to be achieved.

Climatic influences play their part in determining the elements and the aims sought. Thomas Hill, a famous California artist, years ago said that no one should dream of a new home in California except in September or October. In these months the State is at its best.

The warmest days of the year have passed. The whole country is a symphony in brown. The atmosphere, haze-laden, carries that almost imperceptible droning quality which only those who have been on the desert can ever know or love. Tradition, fitness, both protest against the intrusion of the architecture of any water-laden land. It is a country of dreams, of rest, of peace ineffable. It is like Italy; it is like Spain; more than anything else, it is like itself, possessing its own peculiar charm and quality and individuality.

In such environment, and always with the sympathetic and appreciative helpfulness of those making the home, the architect has created for Mr. and Mrs. Charles D. Blaney, of Saratoga, California, something that not only breathes the soul of the country, but fits its own special location. It is the expression of an artist in conjunction with the aspirations of those who have sought cheer, beauty and comfort in a dwelling place.

Mr. Bruce Porter, noted throughout the West as an artist and critic, visited this house near its completion. Returning, he wrote:

"It is a straight piece of enchantment. Exterior and interior are beautiful beyond any expectation of mine. Somehow, as I walked around through the house, it seemed to be a fulfillment of all the things that Mr. Worcester used to find in the art of the architect, and I could hear his chuckle of pleasure in my ears as I moved from one surprise to another. Somehow, being old and weary of art, the house gave me satisfactions that I have not felt for years and thought I could never recover. It is not in any aspect an imitation or an affectation. The architect, picking the spirit of early, spontaneous Italian work, has made it his own, bringing to it a sober, romantic playfulness that is the best of him. The house might have been there forever, or it may after all be only a dream. It strikes me as the most enchanting structure I've ever seen, and therefore may not be there when I go back."

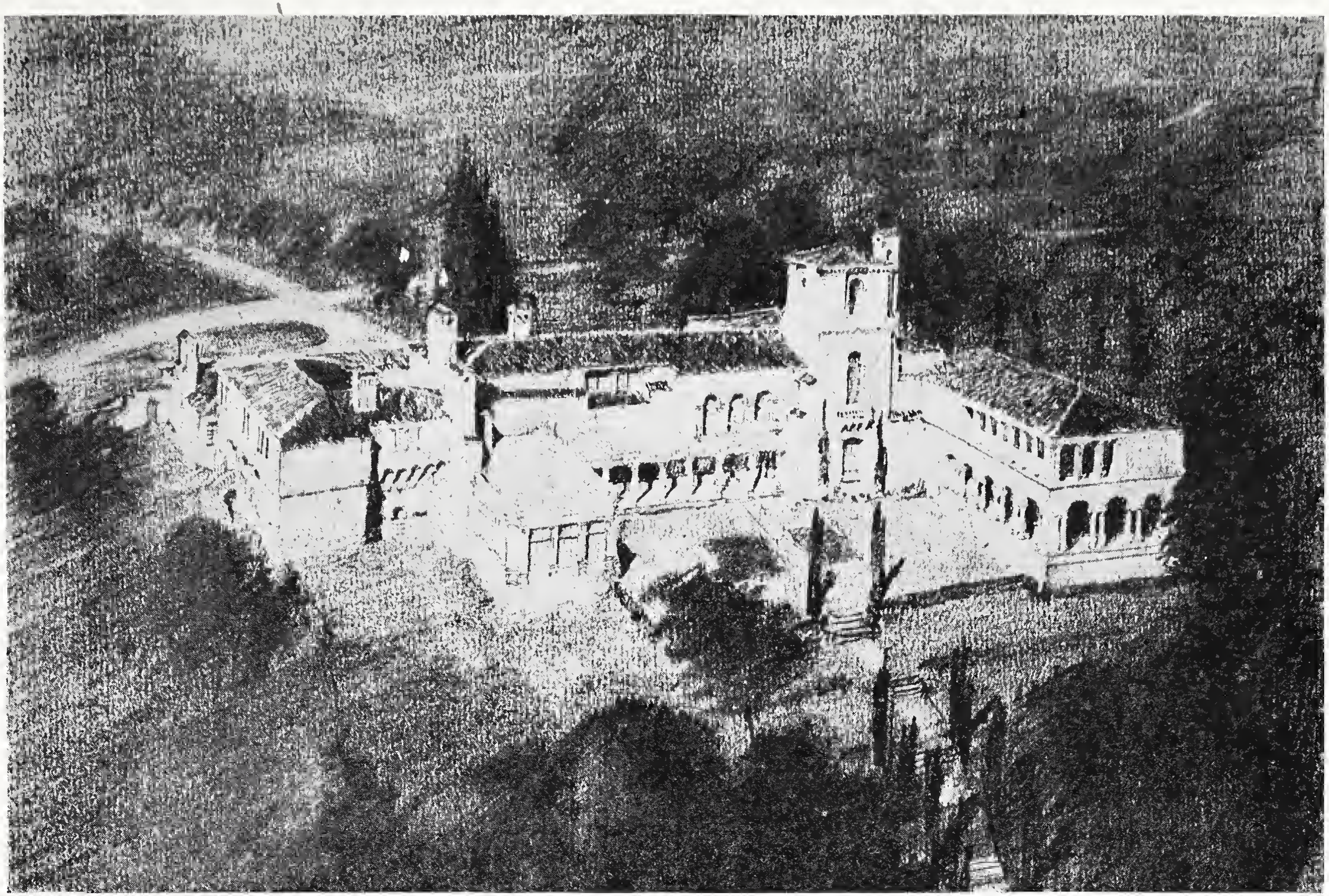
In designing what is thus called a "most enchanting structure" the architect had complex conditions to meet. The development of the plans comprised first of all the requirements of Mrs. Blaney as to arrangement and comfort. Mr. Blaney's requirements included not only considerations of expense, but in many instances extended to appearance and arrangement. The architect had to satisfy himself. Over and above all were the imperative and dominating elements of the site.

Repeated studies developed a series of failures. For months, with all considerations in mind, a successful result appeared out of the question. The problem, complex as to details, was time and again given up and as often resumed. More than a year was devoted to studies before the working plans were commenced.

The Blaney home is on the crest of a knoll overlooking the Santa Clara valley, the approach being gentle. The site was occupied for many years by an old-time ranch house. Stately live oaks, a stupendous pine, cypresses of later growth, an old well, a rose tree forty years old, a pathway leading down to where a dainty fountain now is located, surpassing vistas over the surrounding country —these were among the natural features to be considered. The entire undertaking must have failed had not these and the human considerations urged by the Blaneys and the architect been fused into a general scheme. If this place is a success at all, Nature is entitled to the greatest part in framing the design.

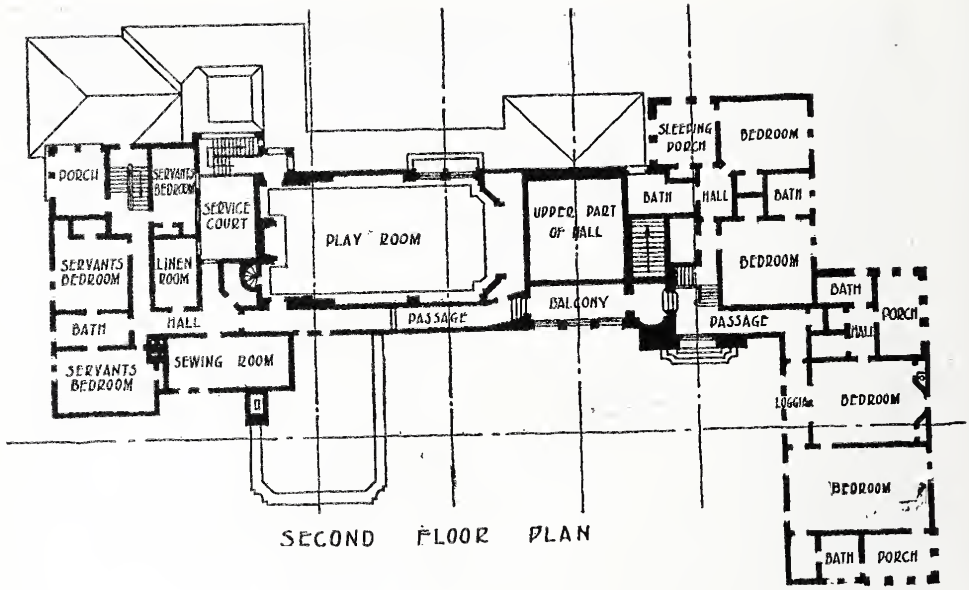
Approach to the house being up a gentle slope, the call for a steadily rising effect, culminating in the tower, became insistent. The roofs are not a jumble apparently placed in reckless abandon, as might be suggested, but they rise in a graceful crescendo to the tower, which in turn is at the crest of the knoll and commands a landscape of marvelous beauty.

There are features of the interior which needed special handling. The ballroom and theatre on the second floor is an instance. Mrs. Blaney is interested in children's work, and an exterior entrance giving access to the ballroom was imperative. A separate entrance through the patio around the old well is not only novel, but met this requirement.

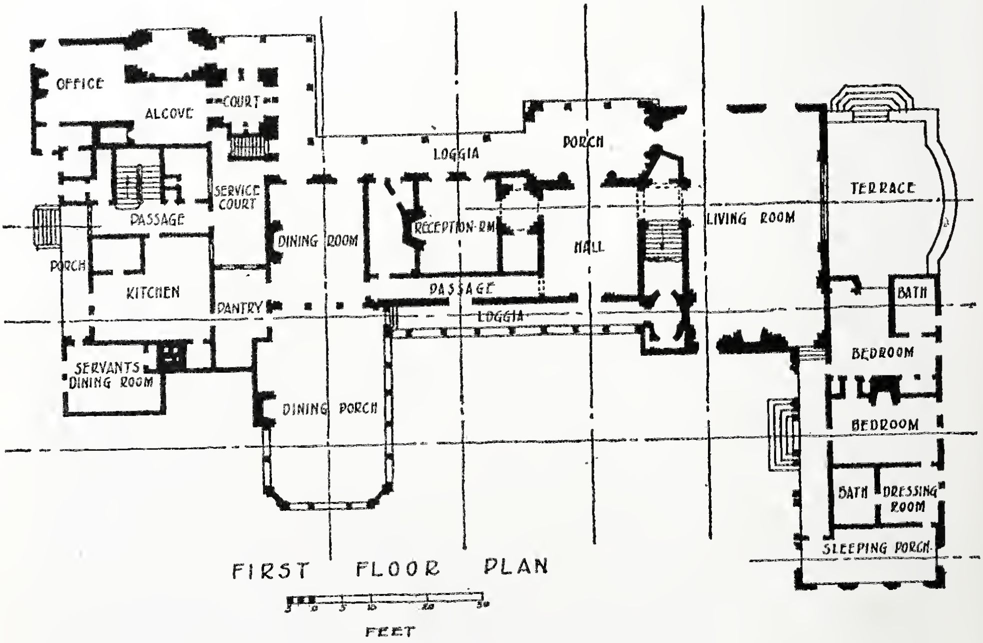


Drawing by Harrison Clarke.

RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.

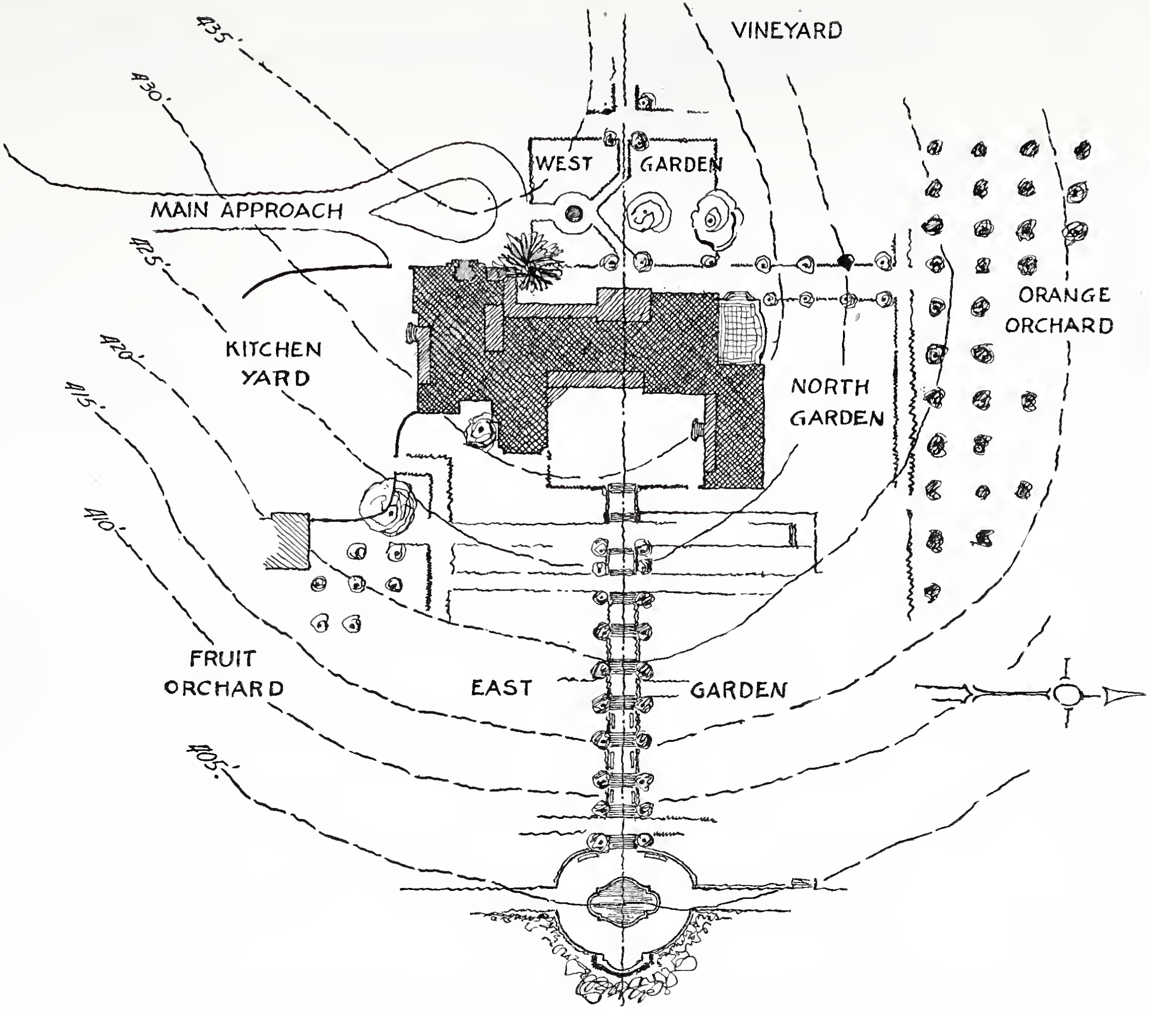


SECOND FLOOR PLAN

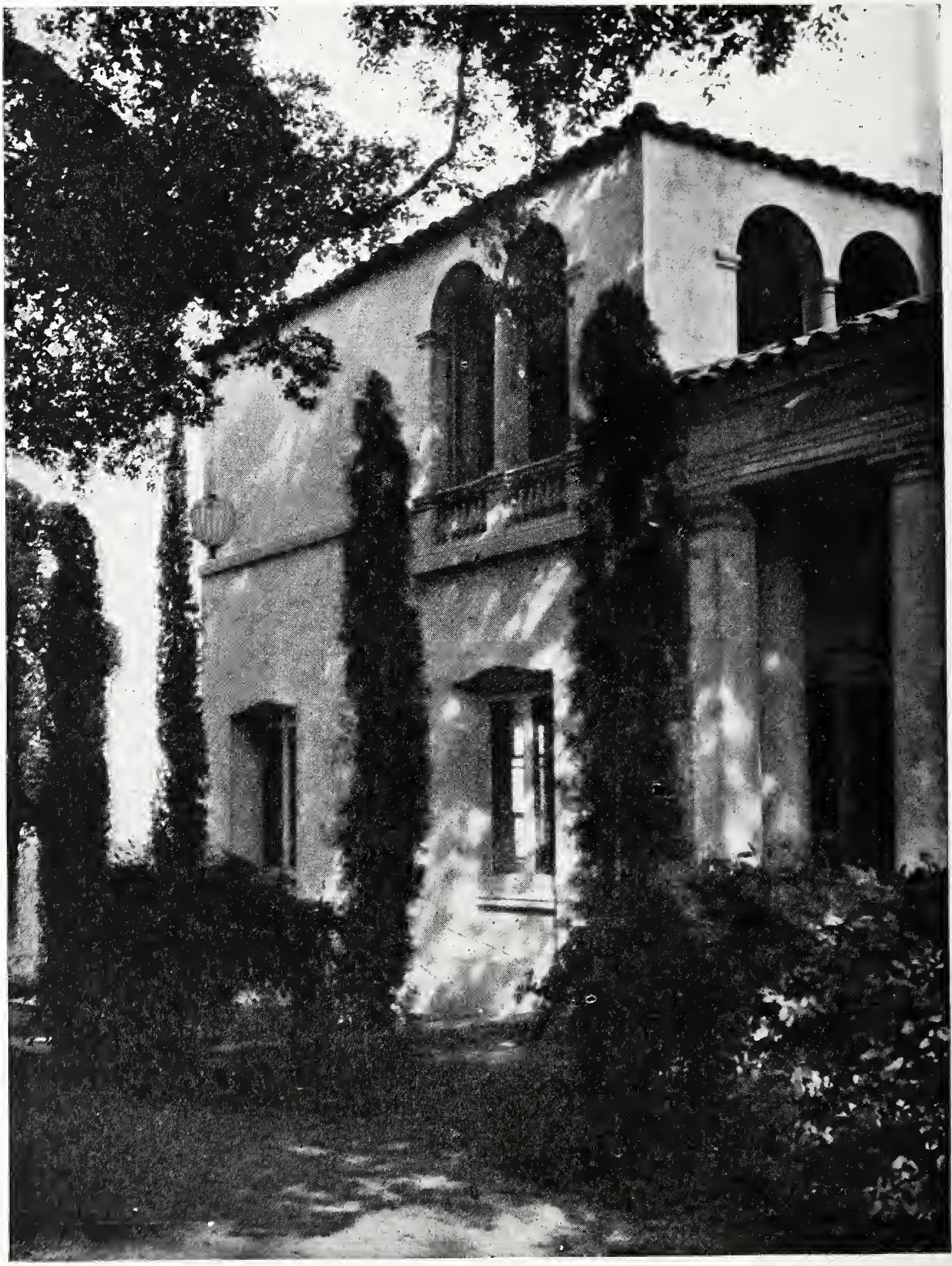


FIRST FLOOR PLAN

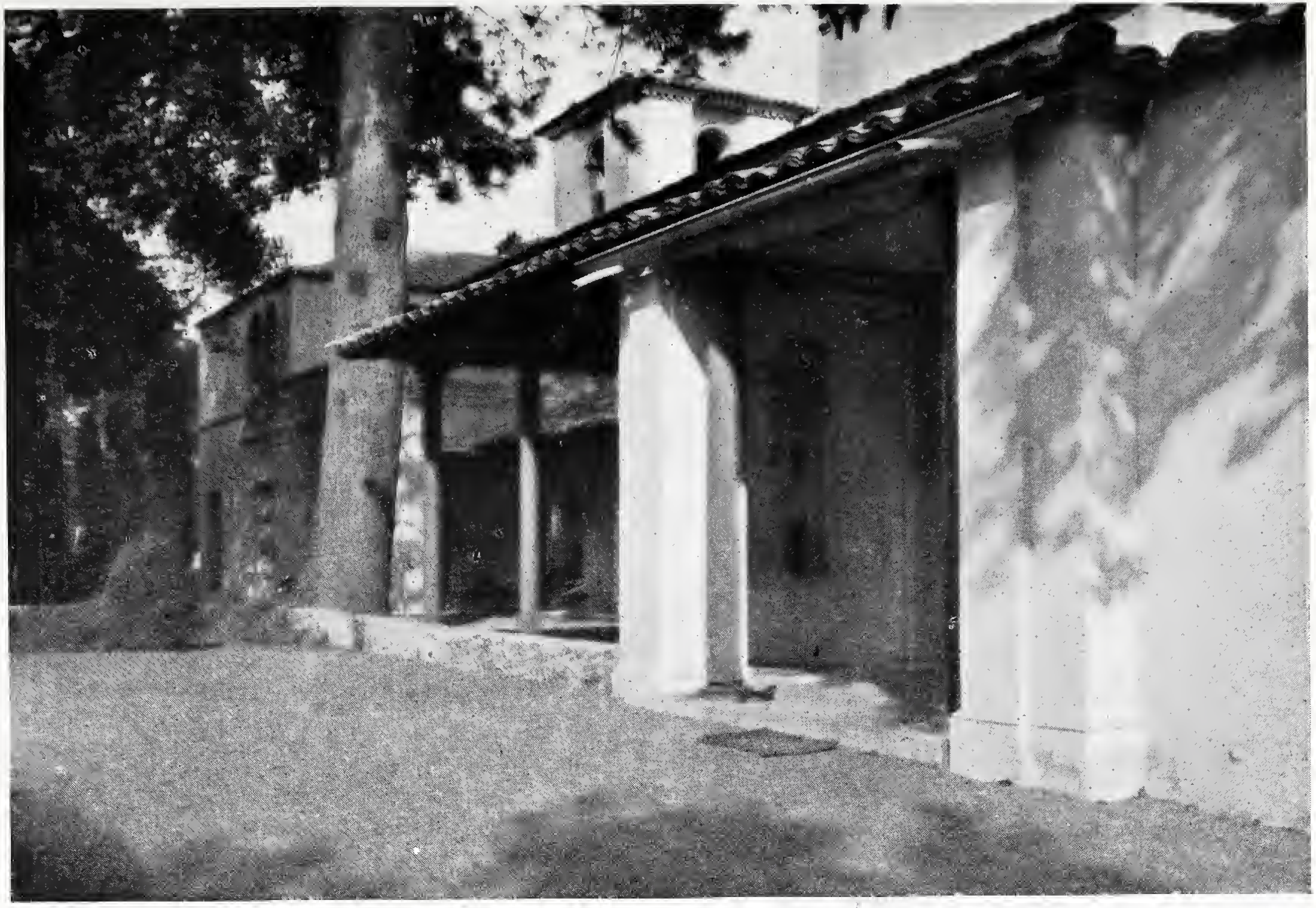
FLOOR PLANS—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.



GROUND PLAN—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.



SLEEPING PORCH OF A GUEST ROOM, FROM WEST GARDEN—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.



WEST LOGGIA—RESIDENCE OF CHARLES D. BLANEY, ESQ.,
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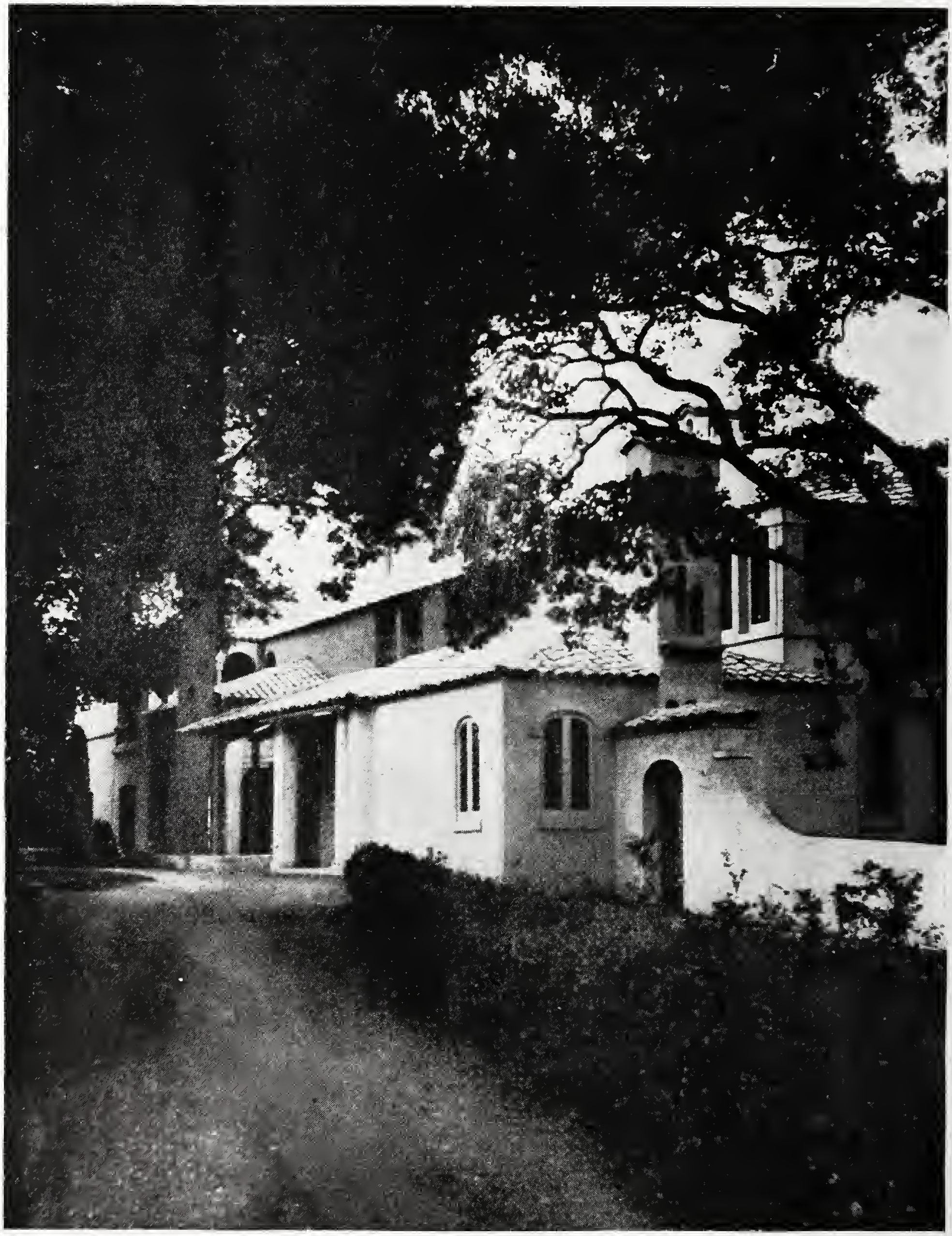
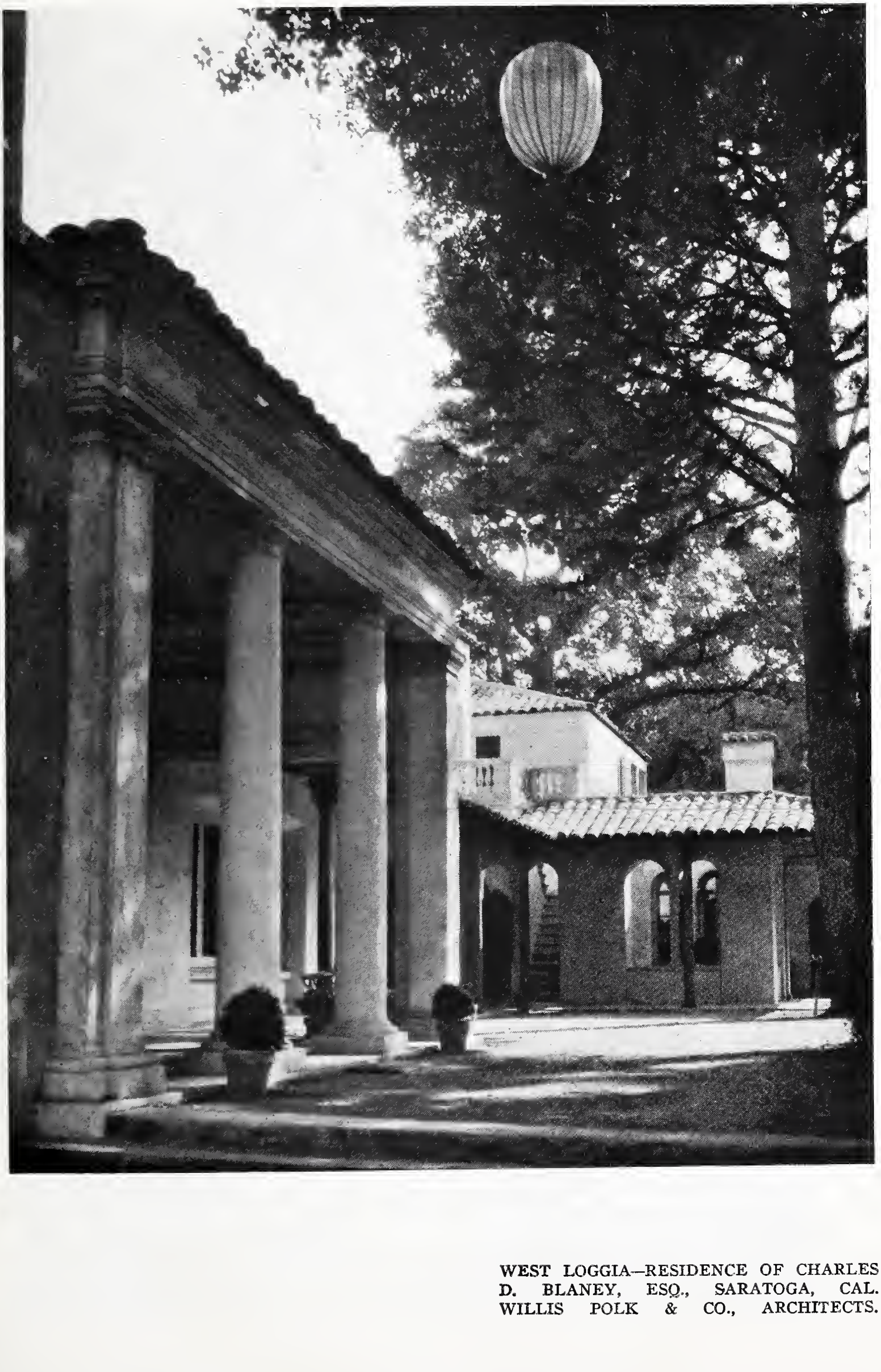


VIEW FROM MAIN APPROACH, WITH WALL OF KITCHEN GARDEN AT RIGHT—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.



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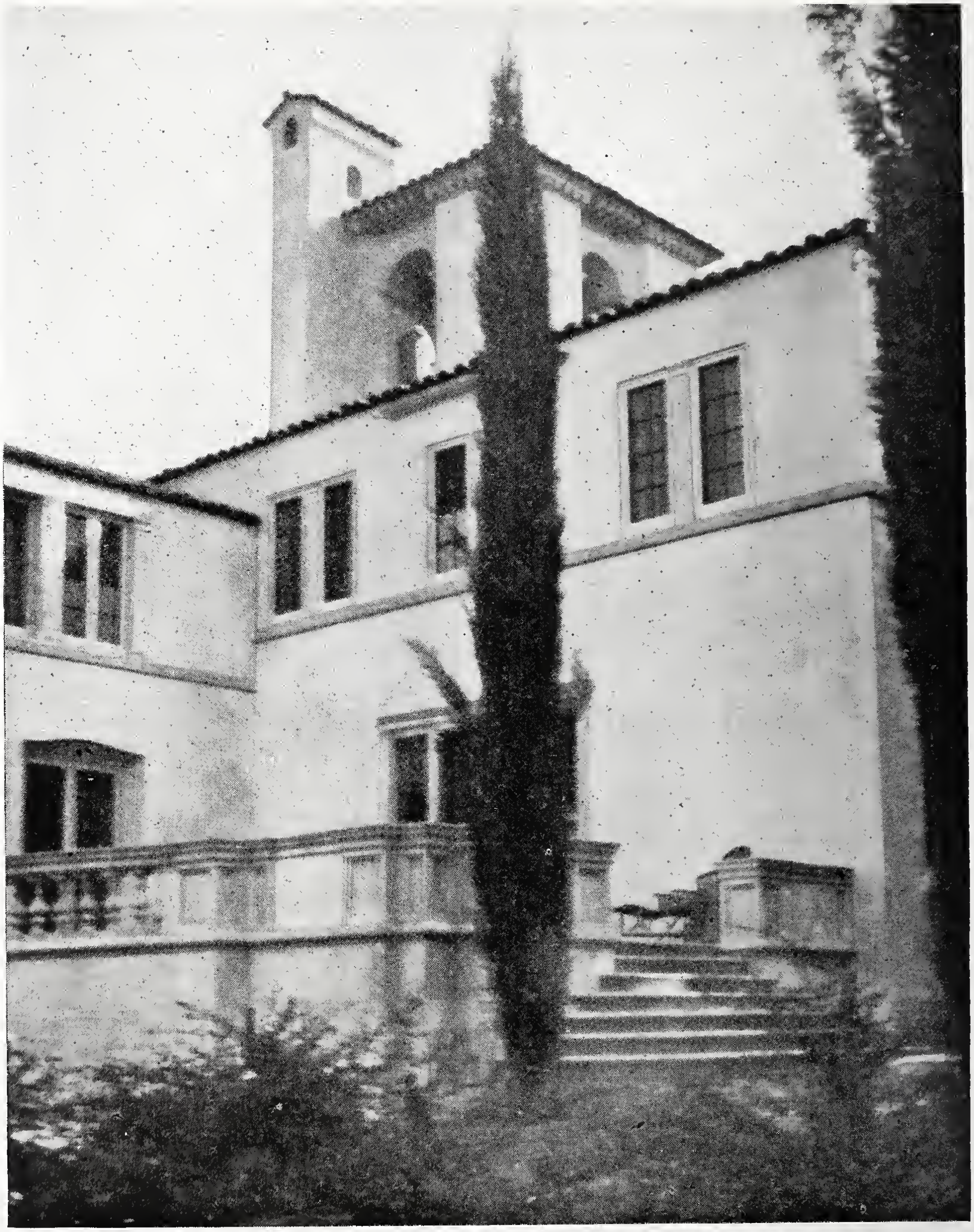
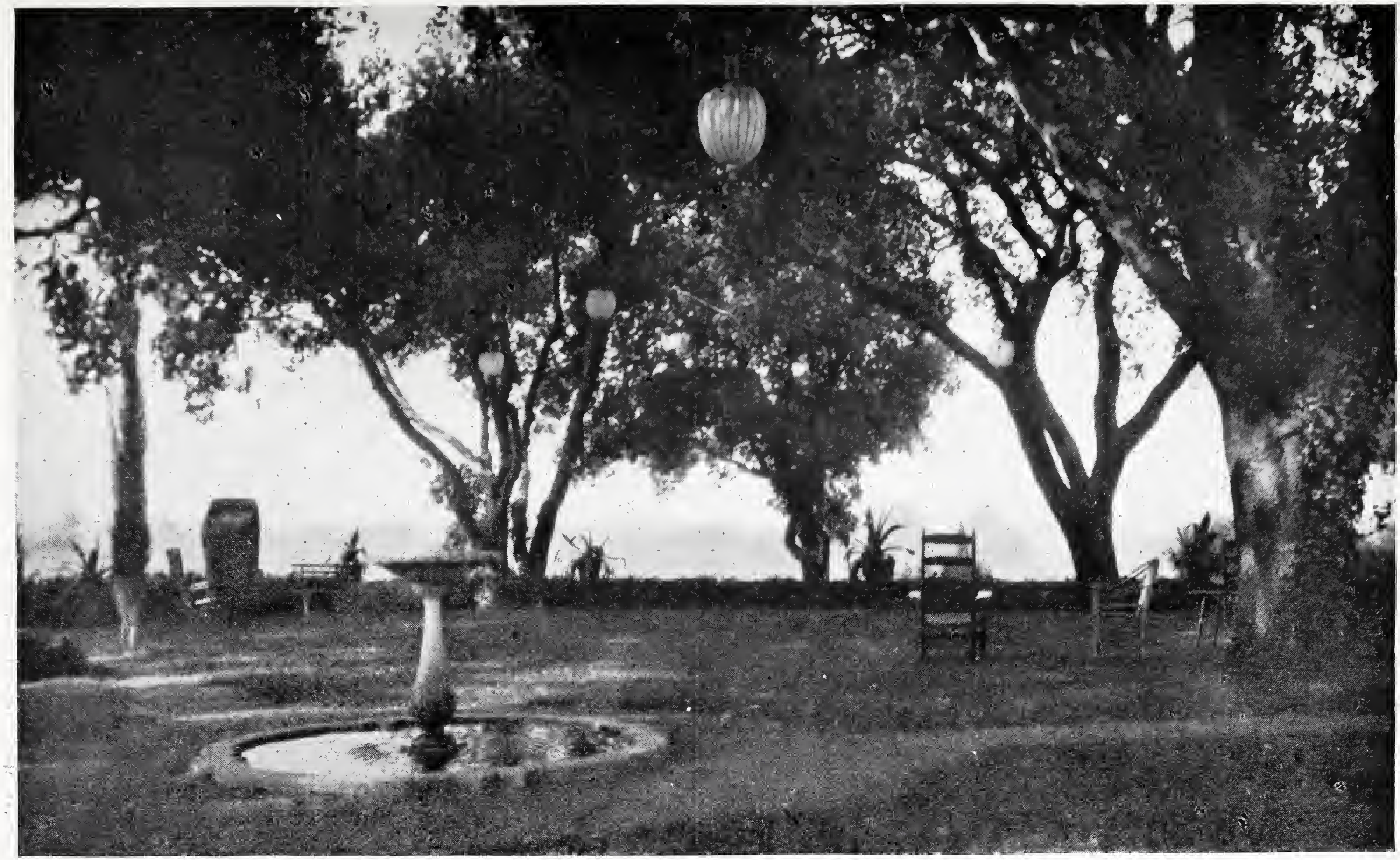
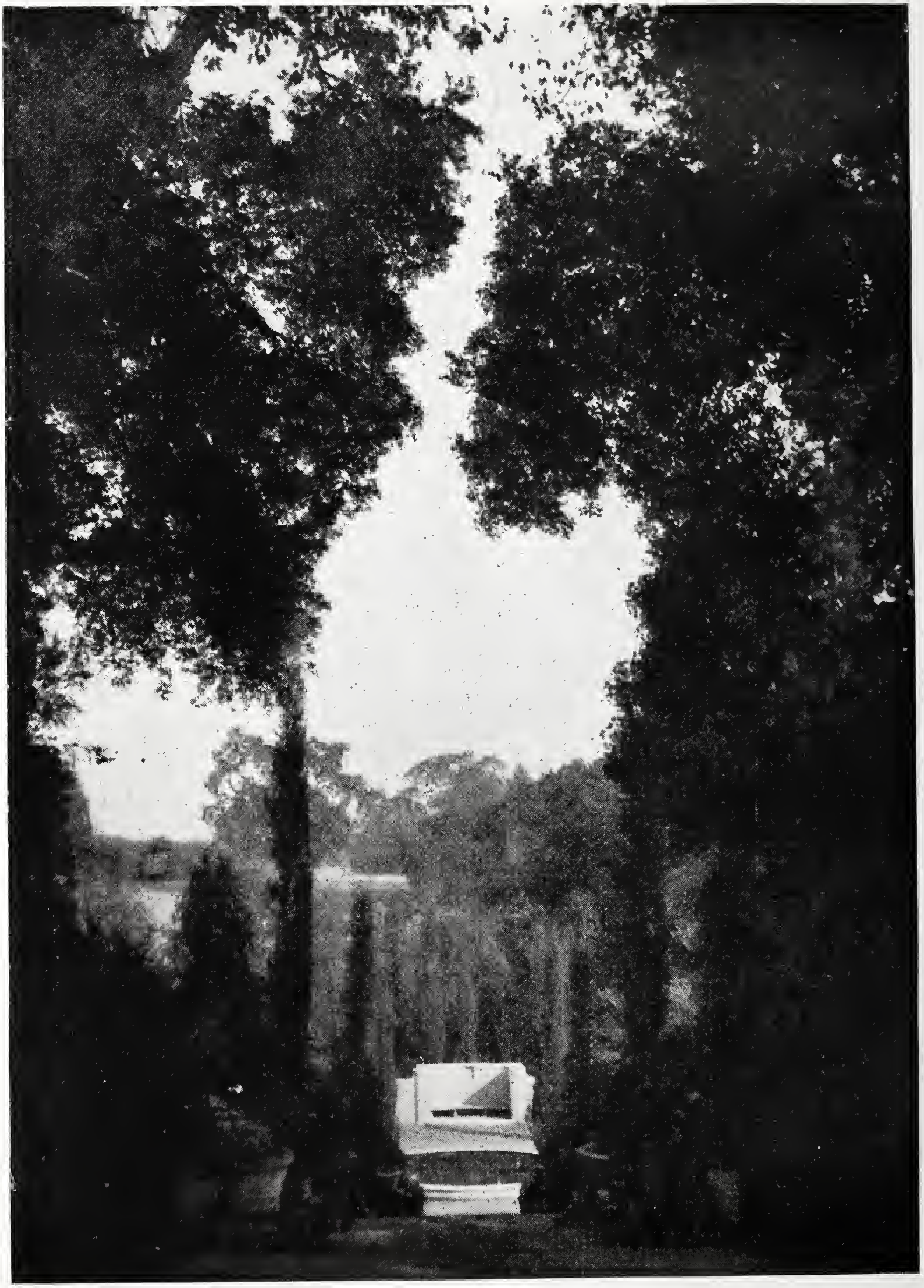


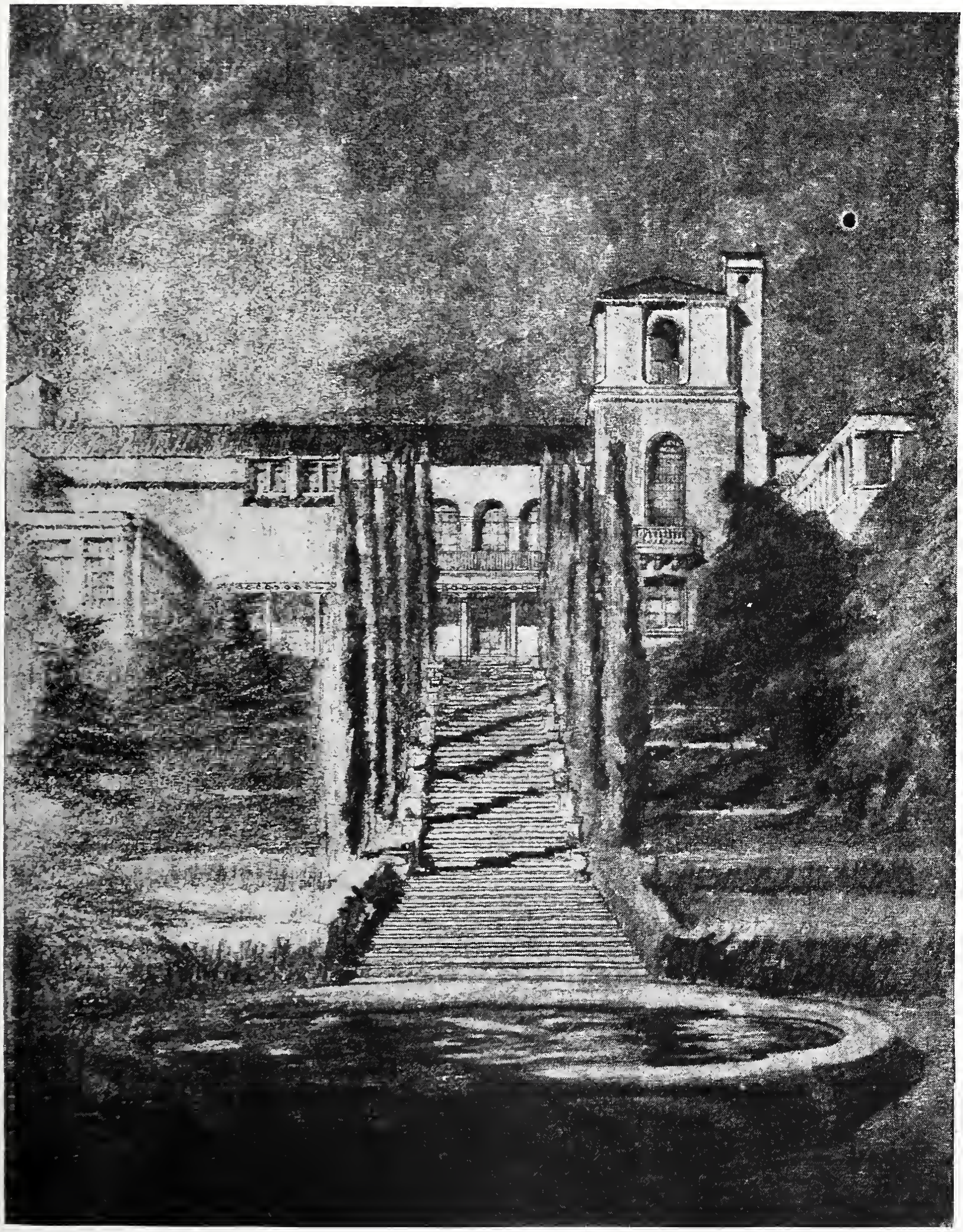
LIVING ROOM TERRACE, FROM NORTH GARDEN—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.



WEST GARDEN, LOOKING NORTH—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS. J. H. P. ATKINS AND MRS. BLANEY, LANDSCAPE ARCHITECTS.

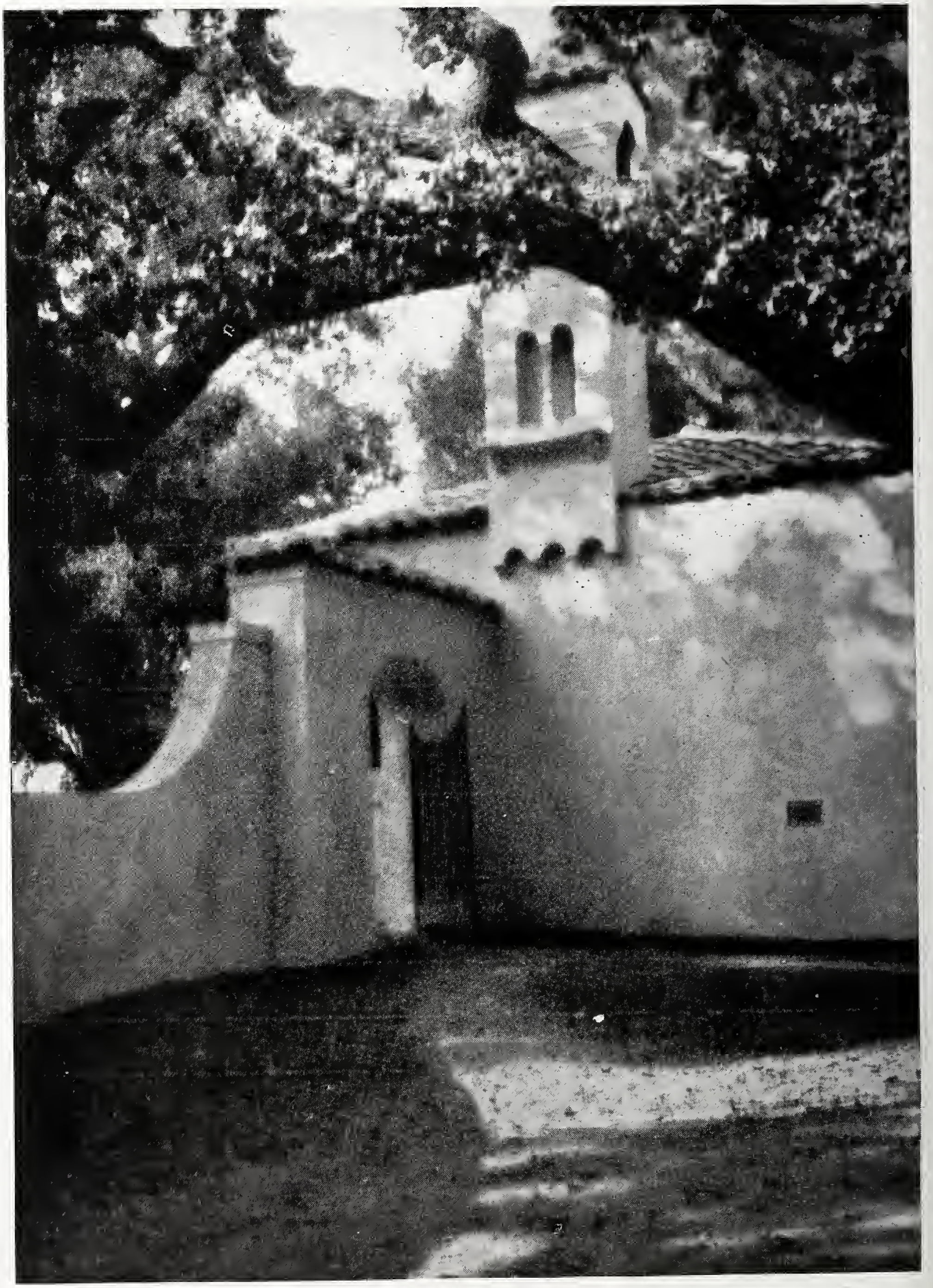


VISTA FROM HOUSE TOWARD POOL AT BOTTOM OF EAST GARDEN—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS. BRUCE PORTER AND MRS. BLANEY, LANDSCAPE ARCHITECTS.

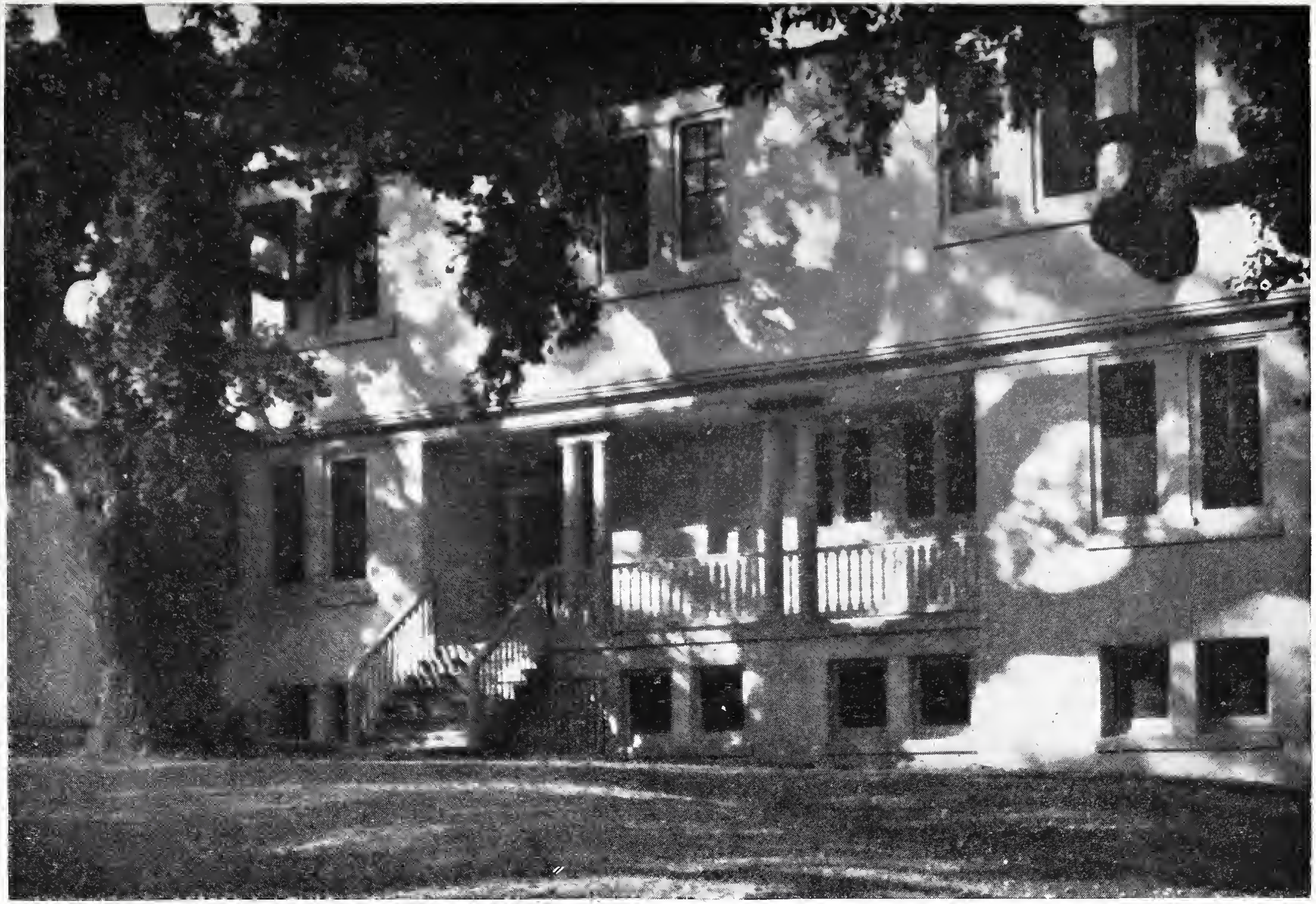


Drawing by Harrison Clarke.

VIEW OF HOUSE FROM EAST GARDEN—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.



GATEWAY FROM KITCHEN YARD TO WEST GARDEN
—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.



KITCHEN ENTRANCE FROM THE KITCHEN YARD—RESIDENCE OF CHARLES D. BLANEY, ESQ., SARATOGA, CAL. WILLIS POLK & CO., ARCHITECTS.

The development of the gardens was really the personal work of Mrs. Blaney. In the west garden she had the collaboration of Mr. J. Henry P. Atkins, and here is located a most exquisitely dainty fountain, Italian in design. In the east garden she had the aid of Mr. Bruce Porter. Both Mr. Atkins and Mr. Porter grasped the spirit of the place and assisted Mrs. Blaney in the most sympathetic manner.

The roof tiles represent a notable advance in American architecture, worthy of special mention. California, as well as the remainder of the United States, has unbounded acres of tiled roof, all in bright brick red or green, and laid evenly, with mechanical care and mathematical exactitude. How the architect returned to first principles, as he believes, is told in a letter addressed to the tile makers more than a year ago. Here it is:

"Just as the steps of the Parthenon were not laid out in mechanically precise and straight lines, but in artistically designed and slightly curved lines, both in plan and elevation—just as its columns were delicately formed with an entasis of almost unattainable elusiveness—just as the geometrical centres of these columns were inclined inwardly so that their inward faces were plumb with and parallel to the inner walls of the peristyle, so I think did medieval builders purposely lay their roof tiles in uneven courses and in lines not exactly straight. After many years I have reached this conclusion.

"Furthermore, I think that the warm, gray tones of medieval roof tiles were the deliberate color choice of their designers and not entirely the result of the softening effect of the dust of ages.

"I think all this was deliberately planned.

"I now desire to thank you for the trouble you have taken after years of patient experiment to finally achieve for me, in the roof of this house, a full realization of my dream that an artistic tiled roof is within the range of commercial possibilities. You have done this both in texture and in color. Furthermore, you have done this at a most moderate cost. You have truly made an artistic result a commercial possibility."

Returning from one of his trips abroad the architect brought with him tiles of the color and tone desired. To reproduce the old tiling in color and texture was the study of years. The illusion of age is one of the striking successes in the treatment of the roof of the Blaney house.

During the past two decades nearly all architects have contented themselves with the reproduction of famous types of different epochs in the evolution of architecture. Some of their work has been beautifully done and no doubt in many instances will in the future be referred to as examples of the twentieth century Renaissance rather than as replicas. The true twentieth century Renaissance will be found, perhaps, when architects, always with a proper regard for precedent, become bold enough to assert an individuality of their own.

With this Blaney house the architect has striven for originality, at the same time having consideration for precedent. He does not believe that it represents a realization of the dream for an American architecture, because nowhere else would this house be acceptable than where it is. It is essentially a creature of environment—but at the same time it is one of the finest offerings of Willis Polk to American architecture.

THE ART OF THE MIDDLE AGES

BY ARTHUR KINGSLEY PORTER

PART I

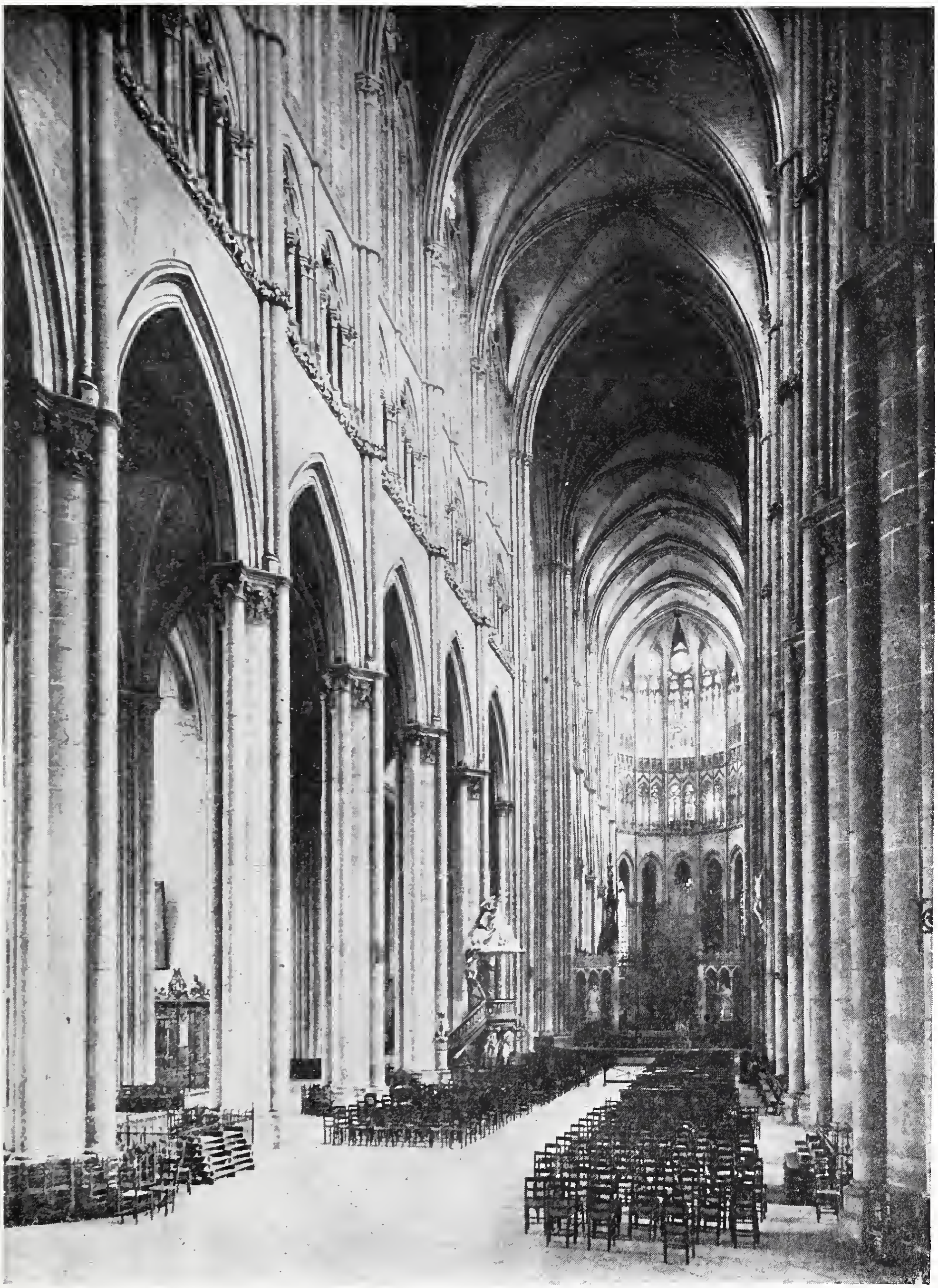
THE touchstone of art is intellectuality. If we consider the evolution of man from the savage beast we shall see that the art which he produces possesses permanent artistic value in measure as, in the progress from brutality, man achieves intellectuality and reflects this in his handicraft. Animals have no art. As man has evolved he has gradually attained the mentality necessary for artistic production. It is true that the quality of intellect required for attaining success in art is very different from that required for attaining success in other lines of human activity Thus it has come about that primitive peoples have at times produced greater art than races commonly accounted more civilized — a fact which in no wise disproves the general truth that art can only be created by brains, brains of a special type, but still brains. The collective mentality of a tribe may enter into the creation of folk-art and may prove itself the equal or superior of any single intellect of a later stage of development. It is none the less intellect. If the progress of the artistic sense has not been steady; if it has advanced rapidly to recede subsequently, it is only displaying a phenomenon constant in all evolution. Many forms of art require, in addition to mentality, technical dexterity; but the latter is in reality merely a means of expression for the former, bearing to it the same relationship that printing does to a book. Unless there be the conception, the emotion of beauty, dexterity of hand is of no avail. If we seek today the primary difference between a symphony by Beethoven and a "coon song," between a drama of Shakespeare and a play by Cohan, between a painting by Botticelli and an illustration in one of our comic weeklies, we shall find that, in each case, what is great and what is enduring differs from what is perishable and of no account by the element of intellectuality. It is, therefore, in the scale of intellectuality that the value of any work of art must be weighed.

By modern architects one not infrequently hears the sentiment expressed that intellectuality in a building is a comparatively minor consideration, and that the really important matter is beauty as expressed in line, rhythm, proportion, mass, color, and so forth; that is to say, beauty and intellectuality are considered divisible and even antagonistic. A strange misconception! The sense for beauty is obviously an attribute of the human mind, merely one phase of intellectuality, nothing less, nothing more. It requires an intellectual effort and intellectual training to achieve, as to appreciate, proportion or mass or line or rhythm or color; and it is precisely according to whether a modern building achieves or fails to achieve these elements of intellectuality that it is judged good or bad. Of such formal beauty I shall say little; not because it is of minor importance, but because being common to the best architectural achievements of all ages it is generally recognized. No one will, I think, claim that formal beauty is lacking in medieval architecture. In classic art we shall hardly find a façade as happily proportioned as that of Paris; we shall hardly find more effective massing than in the spires of Normandy; we shall hardly find line used to greater advantage than in the portals of Chartres; we shall hardly find finer rhythm than in the interior of Amiens, or more impressive color than the glass of Le Mans. It is not at the expense of, but in addition to, these formal elements of beauty or intellectuality that Gothic architecture achieves also others of an even higher order.

There are many kinds of intellectuality. Although most modern and Renaissance structures — in fact, it is not too much to say all — lack the great intellectual qualities of the buildings of the Middle Ages, they may nevertheless obviously be of high merit. A design which, from many points of view, is utterly illogical and absurd, violating many canons, not only of intellectuality but of common sense, like the Palazzo del Consiglio at Verona, may still possess other intellectual qualities, such as delicacy, rhythm and color, that justly entitle it to admiration. Similarly (although I should not wish to be understood as ranking the two buildings together) the Old Library in New Haven, notwithstanding very evident offenses against reason, still manages to achieve, by means of its proportions and rhythm, the softening of age and vines, a beauty which entitles it to rank among the best buildings of the Gothic revival in America. Such edifices amply demonstrate that it is possible for architecture to rise considerably with the aid of a limited intellectuality — flying on one wing, as it were. It is only, however, when all her feathers of intellectuality are fully grown that architecture can reach the greatest heights. A little intellectuality is better than none; but the greater the intellectuality the greater the architecture. Gothic is incomparably the most intellectual of all architectures.

Works of art are great in measure as they possess the quality of inexhaustibility. The obvious may captivate at first glance, but is incapable of bestowing an abiding satisfaction. Close and continued familiarity will, except in shallow natures, inevitably breed contempt for the meretricious. In art, as in aught else, we take out as we put in. The pleasure we acquire without the expense of effort will not endure. Here lies the final proof of the worth of medieval art. For no other style requires so much from him who would enjoy; nor is there any which extends such rich rewards to the happy initiate.

Together with the fundamental fact of criticism that architecture is good or bad according as it is intellectual, we must take into consideration two facts of actuality, which, at first glance, seem so opposed to the usual twentieth century way of looking at things that they appear paradoxical, but which, nevertheless, if we stop to consider a moment, are both evidently true. The first of these facts is, that the thirteenth century was a time of extraordinary intellectual development; and the second that the modern age, from certain points of view, is a time of intellectual degeneration. We are so in the habit of dwelling complacently upon the railroads, electric apparatus, machines, plumbing and other similar physical luxuries which we possess, and which obviously the Middle Ages did not possess, that we have blinded ourselves to the equally evident fact that this material progress has been accompanied by, and in a sense bought at the price of, the deterioration of several mental faculties. In the last few years modern thought has made a great advance in returning to the Middle Ages. By certain scholars the thirteenth has been pronounced the greatest of centuries. Superlatives are dangerous; but it is an undoubted fact that the result of recent research has been to increase more and more our admiration for the achievements of the Gothic period, not only in the realm of art, but also in the realm of pure thought. The very intellectual superiority of the Middle Ages was, in a way, the reason which led the Renaissance centuries to despise not only medieval art, but medieval thought. We moderns are eminently lazy, and our speculation always has primarily a practical or utilitarian scope. We seldom think anything out simply for the joy of the thinking. If we wrestle with an intellectual problem it is in order that we may attain thereby some material end. The Middle Ages, on the other hand, loved thought for its own sake. They wrestled with intellectual problems for the mere joy of overcoming them. It hence came about that the medieval thinkers arrived at results often of great esthetic beauty, but which seldom were of practical value. Modern speculators who cared entirely for the material set aside medieval thought, because they found that it was



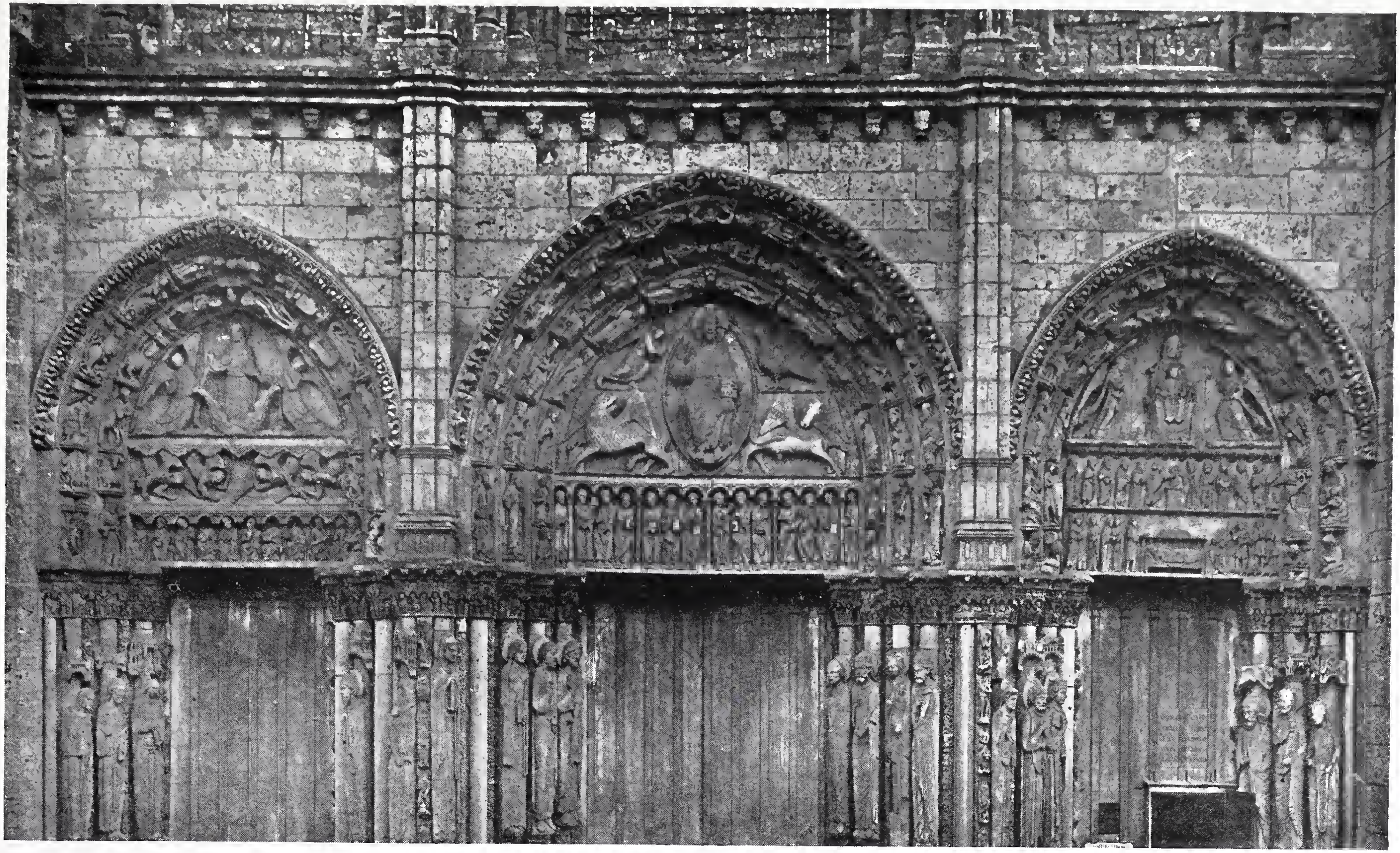
NAVE OF THE CATHEDRAL OF AMIENS.

not useful in enabling them to improve the mechanical arts or to make new discoveries along practical lines. Being entirely absorbed in the solution of pragmatic problems, they chose to devote no energy to comprehending the purely speculative turns of medieval thought. In the last few years, however, we have begun to realize that this scorn of the modern for medieval philosophy was very largely the scorn of the barbarian who stood before the Greek marble and considered it valuable only for burning in the kiln to produce lime. It has begun to be perceived that medieval thought was exceedingly beautiful, exceedingly subtle, exceedingly profound; that, in short, modern thinkers, in rejecting this immaterial and absolute speculation, had rejected something that the world was very much the worse off for not having. Medieval thought may be compared to pure mathematics. The mathematician who follows his speculation in the solution of problems which can have no practical or utilitarian result—at least directly—and is yet so carried away by his intellectual curiosity that he gives his time and his genius lavishly to their solution, is the nearest approach, in our age, to the medieval thinker. It is almost inconceivable to us that mental gymnastics could have been enjoyed to such an extent and for their own sake. We who shrink from every mental exertion and can be spurred to mental activity only by the prods of our comfort or our pocket books cannot understand the overflowing energy of the medieval genius, its delight in intellectuality for its own sake, its scorn of the easy and the obvious, its love for the subtle. Yet the medieval mind, in a way, is as superior to ours as a spirited stallion is to a dray horse. By means of its exuberant, almost wasteful, energy, it achieved results of which we are incapable.

Medieval art is the faithful reflection of the medieval mind in its intellectuality, in its subtlety, in its avoidance of the obvious. Like medieval thought, it was long held in scorn and derision by later ages which were unable to fathom its profundity. Notwithstanding the increased appreciation of modern times, the vital beauties of the Gothic cathedral still roll by far above the head, not only of the average layman, but also of the average architect.

A curious example of the modern lack of comprehension of the Middle Ages and of the modern tendency to scorn everything which it cannot understand is afforded by the history of the researches of Mr. Goodyear. This archeologist stated that medieval buildings were not built upon straight lines as modern buildings are. It was a question of a fact found in practically all medieval buildings, to be easily demonstrated and tested, even by a casual inspection. Mr. Goodyear's announcement was at first greeted with incredulity, and no one was more incredulous than the archeologists and the architects. In modern buildings the T-square and triangle rule supreme; all lines are straight, hard and metallic. It is therefore unthinkable to the modern architect that there could be any other way of building. Yet the medieval method of construction was infinitely more subtle, infinitely more intellectual. For the obviousness of regular spacing it introduced the subtlety of spacing which was not quite regular. For the obviousness of straight hard lines it substituted the refinement of lines which were not straight and not hard. For the obviousness of something taken in and comprehended at a glance it introduced something so subtle and illusive that its very existence was lost sight of for long centuries.

The same principle of variation is carried out in every detail of the Gothic structure. In a classical building all the capitals of an order are precisely the same. One model serves for the lot; it is impossible to distinguish one from the other. Gothic builders would never do anything so banal. They make each capital different; each has something new to say. The attentive observer will find in each a new design, a fresh beauty. Take a large building, such as a cathedral, which undoubtedly contains hundreds, and probably thousands, of capitals. The intellectual appeal afforded by medieval art, where every one of these capitals was a source of an intel-

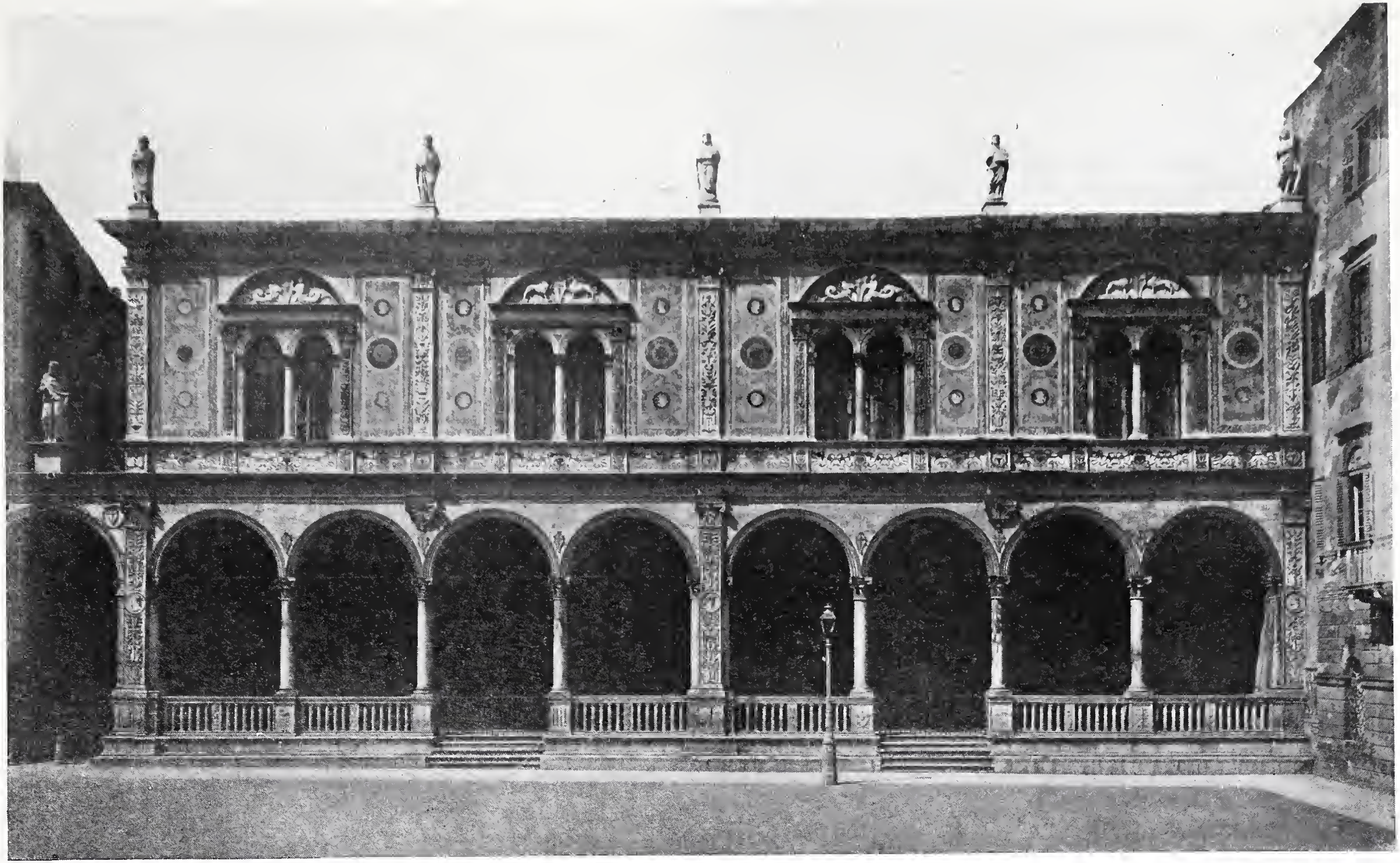


WESTERN PORTAL OF THE
CATHEDRAL OF CHARTRES.

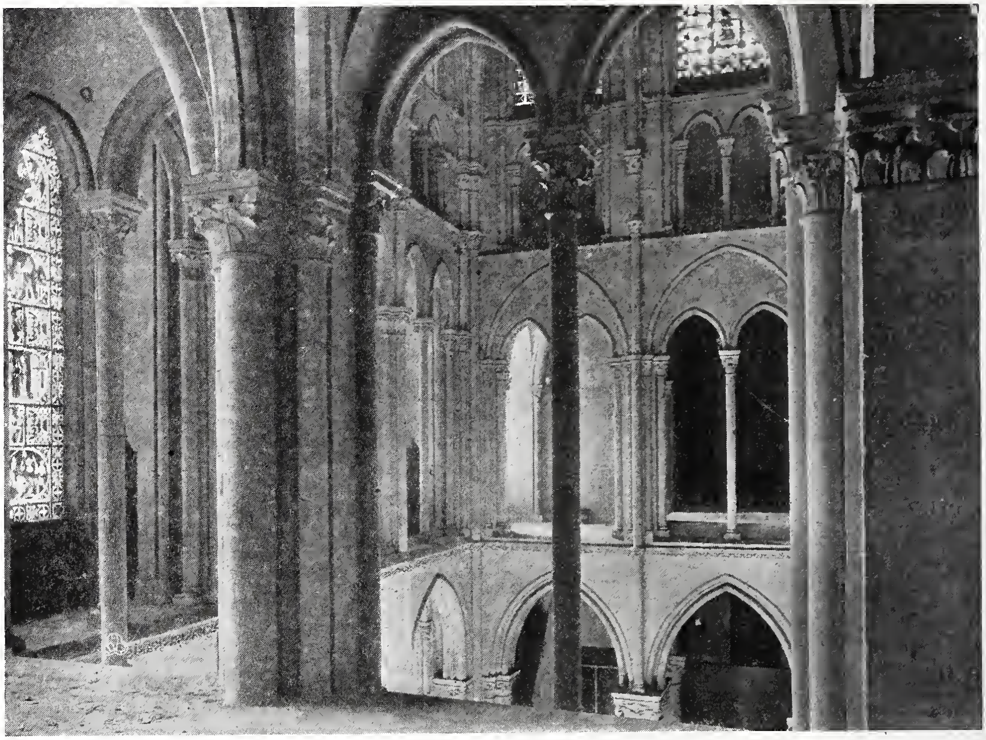
THE PANTHEON, ROME.

lectual demand upon its creator and where every one affords an intellectual delight to the observer, is infinitely greater than in a classical building, where every capital is like every other and where all are designed according to a well established and immovable norm. Yet I do not think that the classic order, repeated thoughtlessly, almost mechanically so many thousands and millions of times, at its very best was absolutely more beautiful, better studied, more thoughtfully worked out, than a French capital of the twelfth century, which was a new and original creation forever unique.

It is not only in the capitals that the medieval building possesses this greater wealth of creative imagination. The same details are never repeated. Each molding is varied. The medieval cathedral is never obvious. Its choicest delights are reserved for those who study it patiently and long. Even the grotesques, which at first sight seem so naïve and simple that the word intellectuality can hardly be applied to anything so immediately appealing, are, in reality, extremely subtle. These strange creatures are infinitely varied among themselves, unlike the grotesques on a classical building, where, for example, the same lion-head is repeated many times. The medieval grotesques, as wild and elusive as the bats and rooks in whose company they spend their existence, are endowed with the fascination and mystery of untamed things. They are finer-grained, more sensitive than classic grotesques, just as the wild flower possesses a poetry lacking in cultivated blossoms. They reveal the intellectual thirst of the Middle Ages, their insatiable longing to know what might be contained in unknown portions of the universe. For in those days men lusted feverishly, unreasoningly after knowledge; and where means of accurate information were lacking they, just as we today, resorted to conjecture and imagination, with, however, the difference that their imagination was infinitely finer and more poetic than ours. The intense interest excited by the bestiaries is to be explained on this ground. The strange and romantic animals there described are



PALAZZO DEL CONSIGLIO, VERONA.

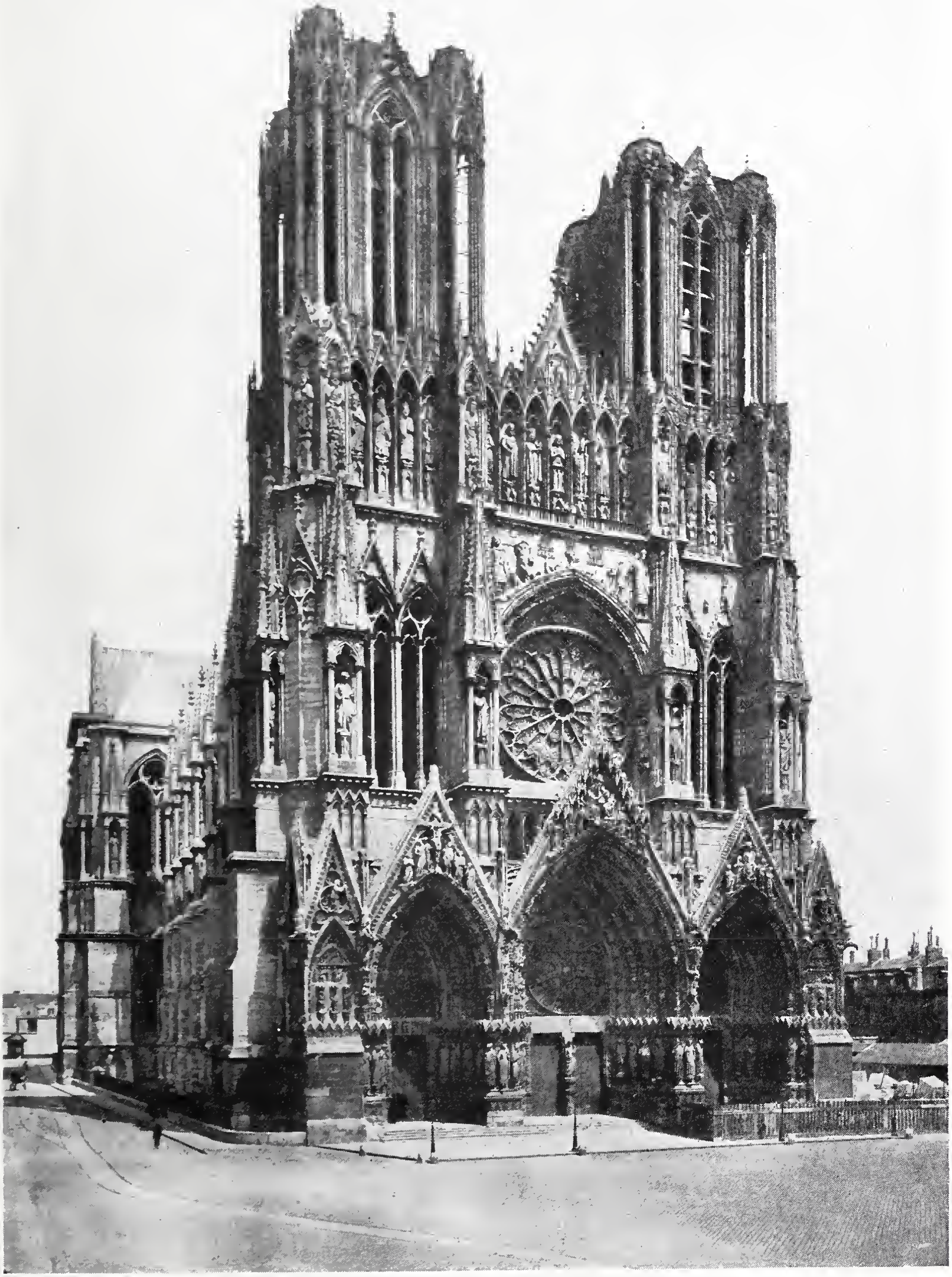


TRIFORIUM IN THE CHURCH OF ST.-REMI, REIMS.

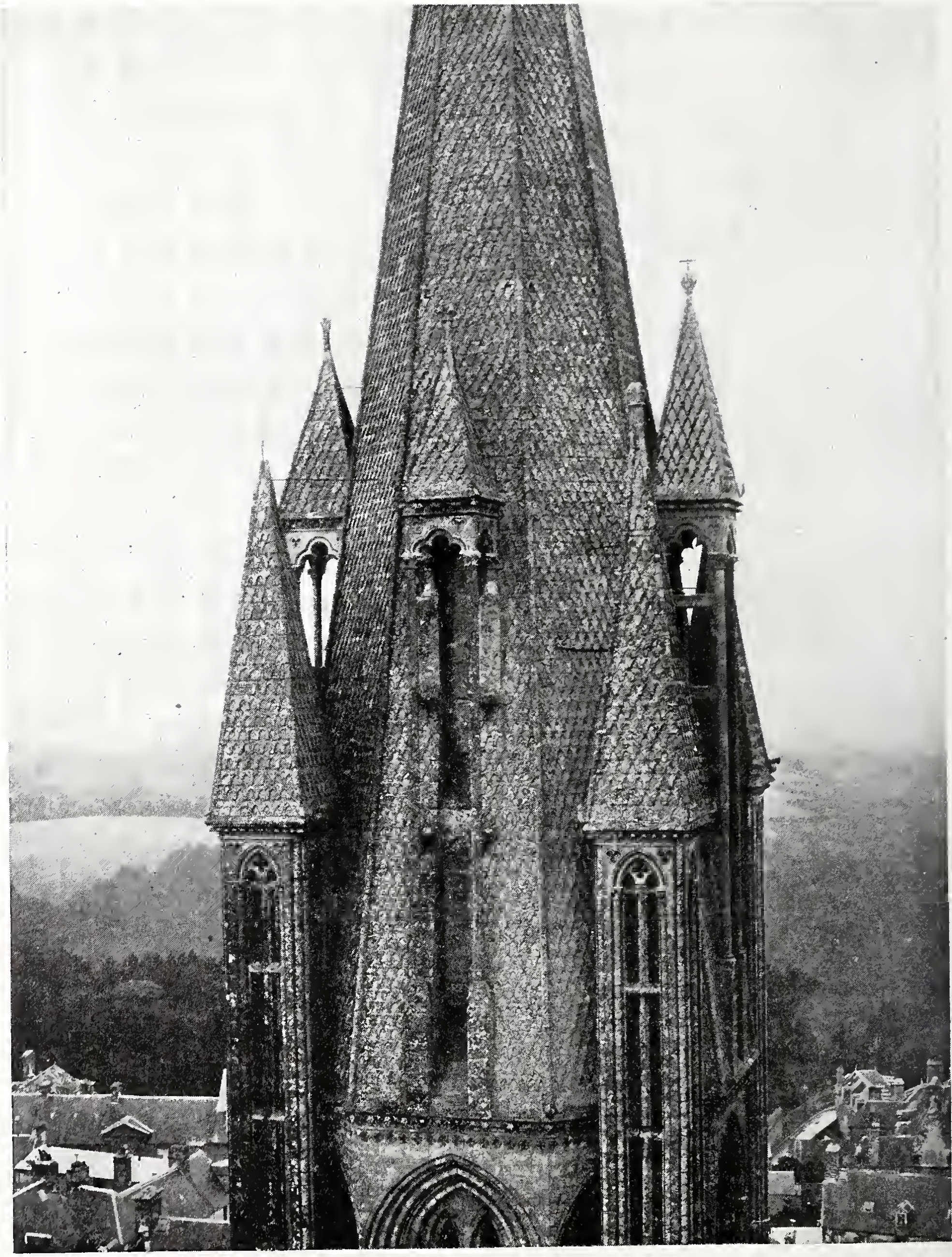
largely those which are not found in Europe, and the Middle Age brooded long and thoughtfully over the marvelous characteristics of these fabulous beings of distant continents. The grotesques perhaps are merely another flight of the medieval imagination in its effort to conjecture what the fauna of unknown countries might be like. The Gothic artists set themselves no meaner task than to represent in the cathedral everything which exists in the universe. The church was the reflection of the supreme goodness of God, as manifested in the work of His hands. As such it was fitting that the animals of the world should be represented alongside the other manifestations of divine wisdom.

From an artistic point of view these lighter and more fanciful figures serve as a contrast to the profound and mysterious imagery which elsewhere adorns the cathedral. Like a burst of childish laughter they relieve the gravity of the long lines of saints, the soberness of the symbols of man's sin and redemption.

A classical building (unless it chance to be Greek) is understood at a glance. We may take the Pantheon as an example. There is one great dome, the portico before it, niches, and a certain amount of stereotyped decoration repeated with variations. One look at this building reveals to the educated eye all there is. The proportions, the rhythm, the grandiose conception, the simplicity, the undeniable greatness and beauty are at once comprehended. They are so evident that one would have to be stupid indeed to miss them. The consequence is that the Pantheon always has appealed to the crowd, and always will. Gothic architecture, on the other hand, is infinitely more subtle. The very fact that the Pantheon contains one large vault, whereas the Gothic church contains ten or twelve or more, makes the classical building much easier to comprehend. The mind catches at a glance the outline and shape of the structure. It is impossible to forget that there is just one dome in the Pantheon, whereas



THE CATHEDRAL OF REIMS.

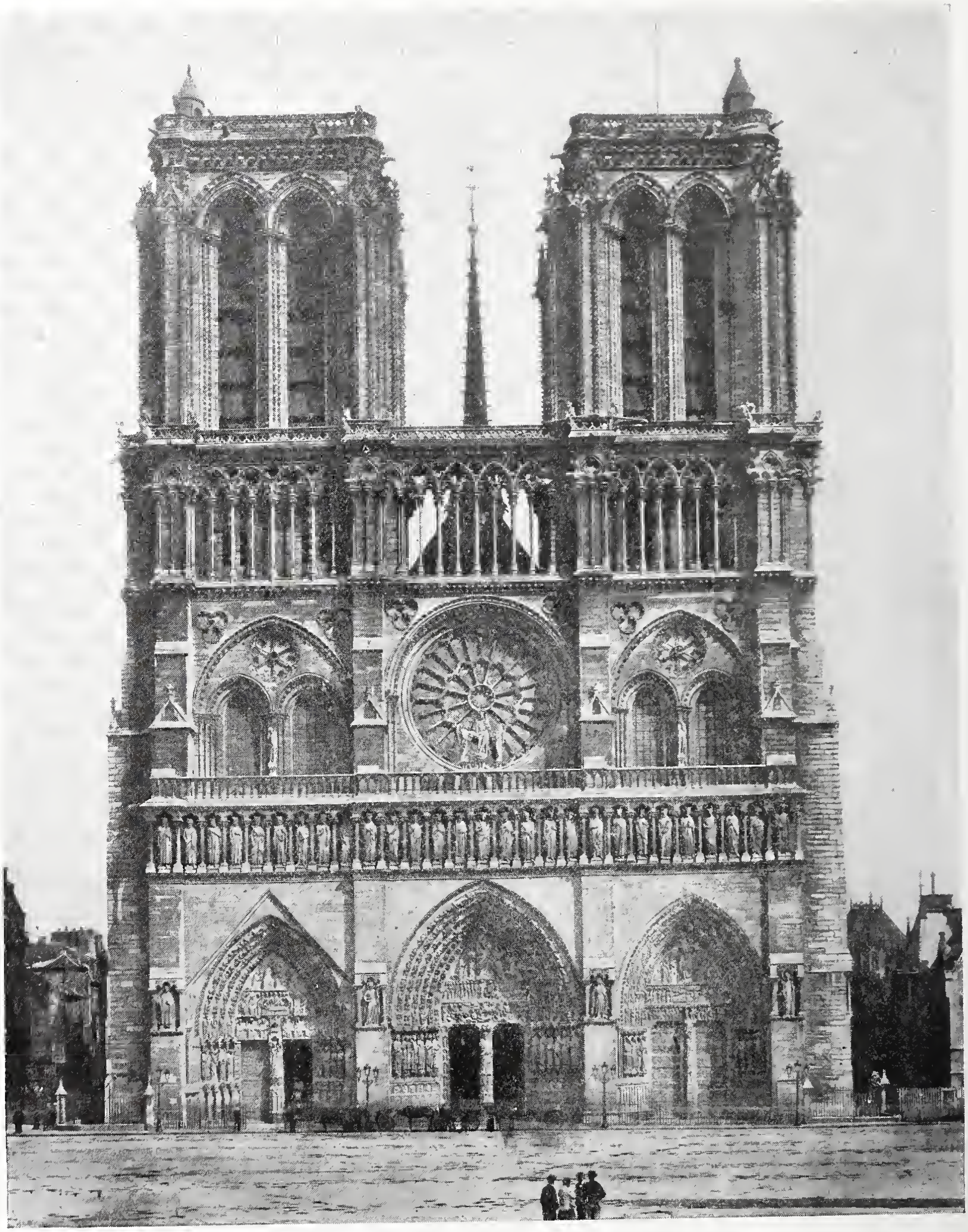


SOUTHERN SPIRE OF THE
CATHEDRAL OF COUTANCES.

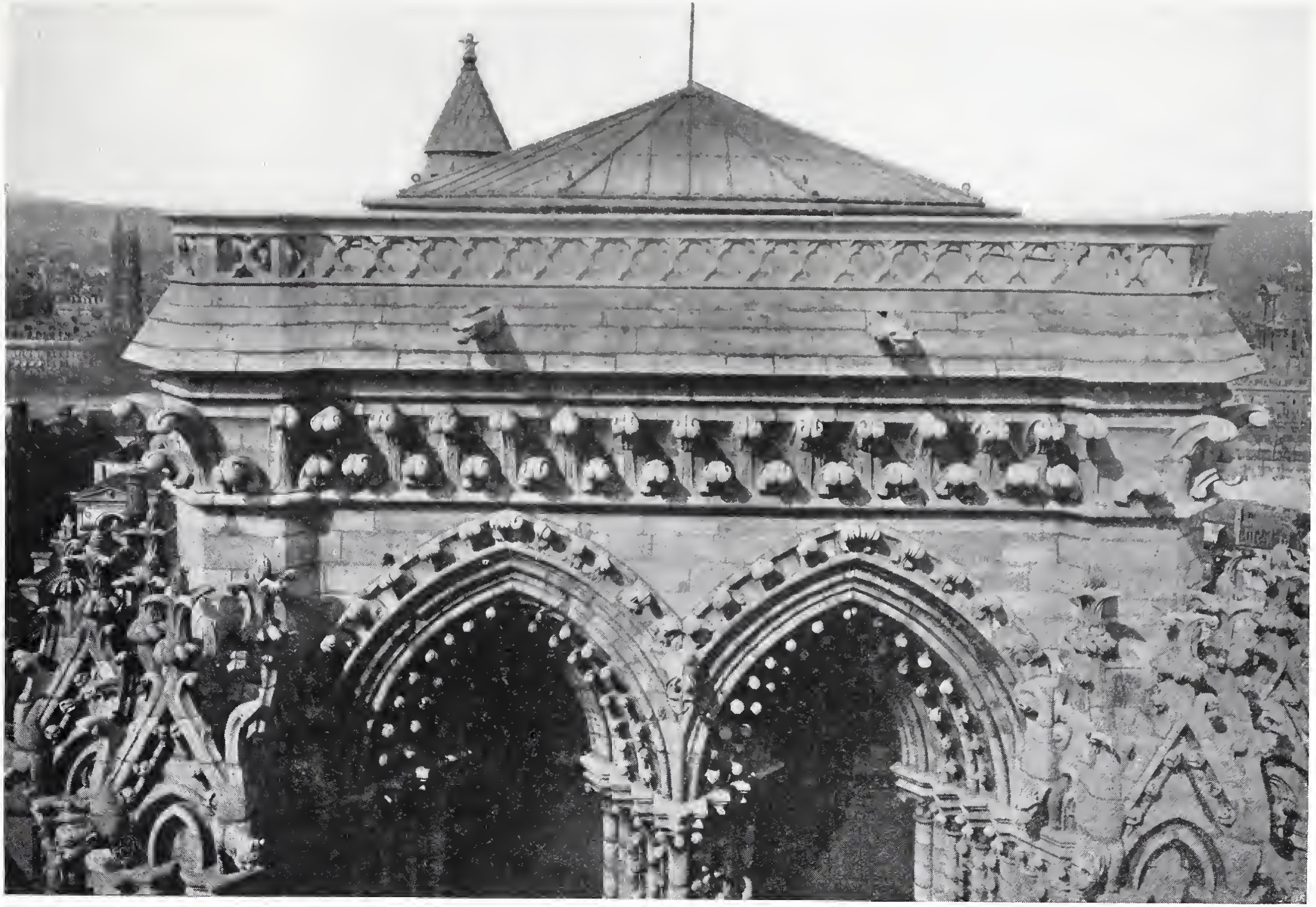
even one who knows Amiens intimately would be unable to tell offhand how many vaults there are or how many bays the nave is long. The medieval conception is more subtle, less obvious. Also the details of a classical building, however exquisite, are easily comprehended; those of a medieval building cannot be completely understood after years of study. Nothing is placed in a Roman or modern building where it does not immediately catch the eye and show. The Gothic building, on the other hand, is full of exquisite detail lavished upon the roofs and cornices, in places where it is necessary to seek with the greatest perseverance to find it. It is natural that the intellectually degenerate modern age should prefer the classical building, and that modern architecture should be modeled upon it. We who are too lazy—as the existence of advertising proves—even to make the intellectual effort necessary to decide which kind of breakfast food it is best for us to use, but have to have the poorer kind thrust down our throats by means of electric signs and glaring billboards which we, the consumers, cheerfully pay for, rather than make the mental effort necessary to decide what we want,—we naturally prefer architecture that is built upon the principle of advertising, and that proclaims any merits it may have with such insistence that they cannot be missed. In fact, in modern American buildings, one will generally seek in vain for subtlety of thought or detail. Everything is obvious, pounded forth with a brass band, brandished in our faces. It is actually, as well as historically, exhibition architecture, with all of vulgarity that the word implies.

The Gothic architects, for all their interest in detail, were too wise to confuse their general design. In the façade of Reims, for example, there was absolute unity of composition. The broad masses of the buttresses, the form of the towers, the stories, were all marked as clearly as in a modern construction. The big divisions were not obscured by the profusion of detail. Yet the quantity and quality of detail was incredible. Each capital, each statue, each bit of tracery, each molding, was a masterpiece. The delight which this façade gave was therefore much greater than that which a modern building is capable of bestowing. We had not only the first joy in the main lines of the composition (such as we might conceivably receive from a modern structure), but the longer we remained the greater became our delight in the details, the existence of which was at first hardly perceived.

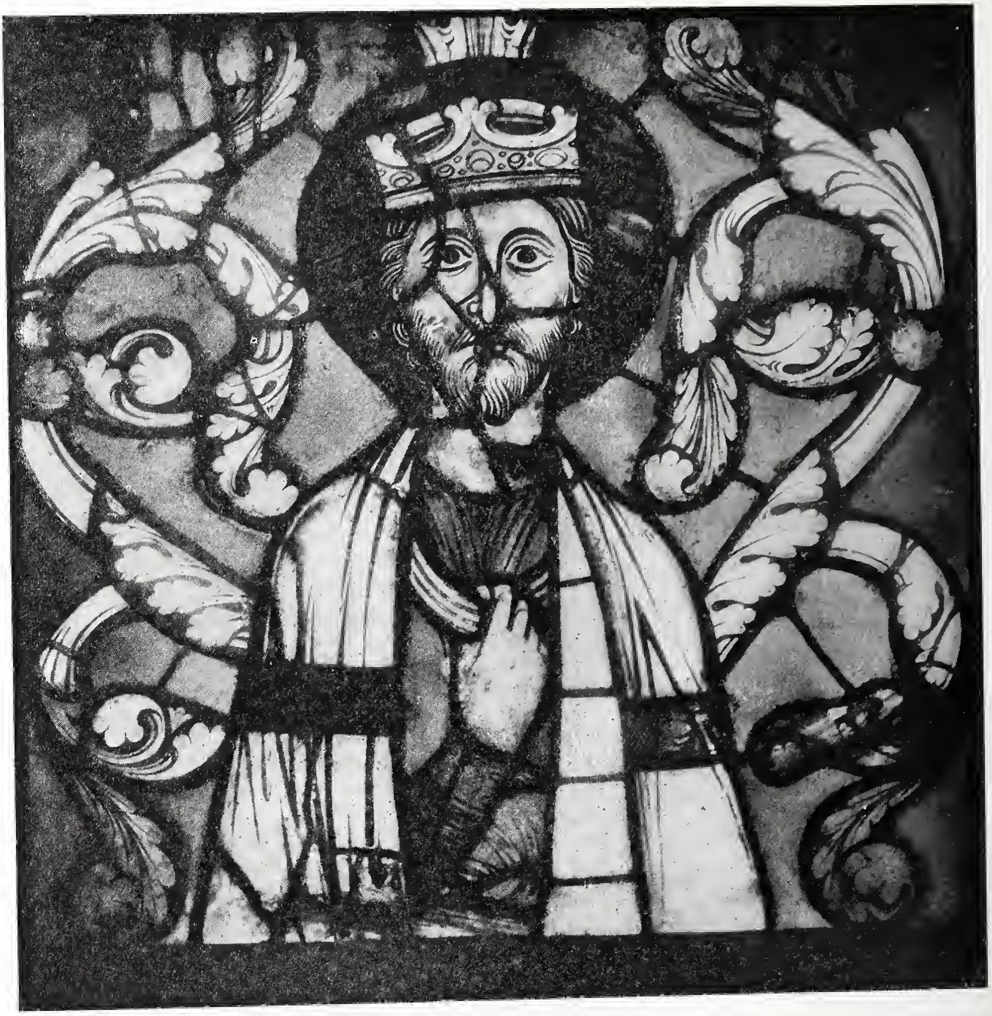
The Gothic builders applied the same principle to stained glass, which offers a striking example of the difference in spirit between medieval and modern art. The medieval artists made of their glass primarily an architectural accessory. When we first enter a Gothic church we see in the windows merely a mass of color — the most exquisite imaginable color. We distinguish no figures; we see no pictures. It is only when we approach closer that we see each of these windows is made up of a quantity of small medallions, and that each of these medallions contains a number of small figures. We have to look with attention to perceive them. When we do give this attention, however, we find that the pictorial design is worthy of the most careful study. Not only are the subjects represented full of profound philosophical and theological meaning, but the flow of line, the rhythm, the composition, and, above all, the coloring, are sources of unending delight. I have heard modern critics reproach medieval glass for not being naturalistic. They find fault with the figures because they are not lifelike. Nothing could be more characteristic of the nineteenth century attitude towards art. Some wit has defined modern architecture as that art which makes something constructed of one material look as though it were constructed of another, which, were it genuine, would be objectionable. Modern architecture, consequently, instead of being content to let stained glass look like stained glass, has sought to make it look first like a painting and then like the actual object represented. According to this point of view, the perverted genius who, in the Borghese Palace at Rome I think it was,



NÔTRE DAME, PARIS.



DETAIL OF SUMMIT OF NORTHERN
TOWER, NOTRE DAME, PARIS.

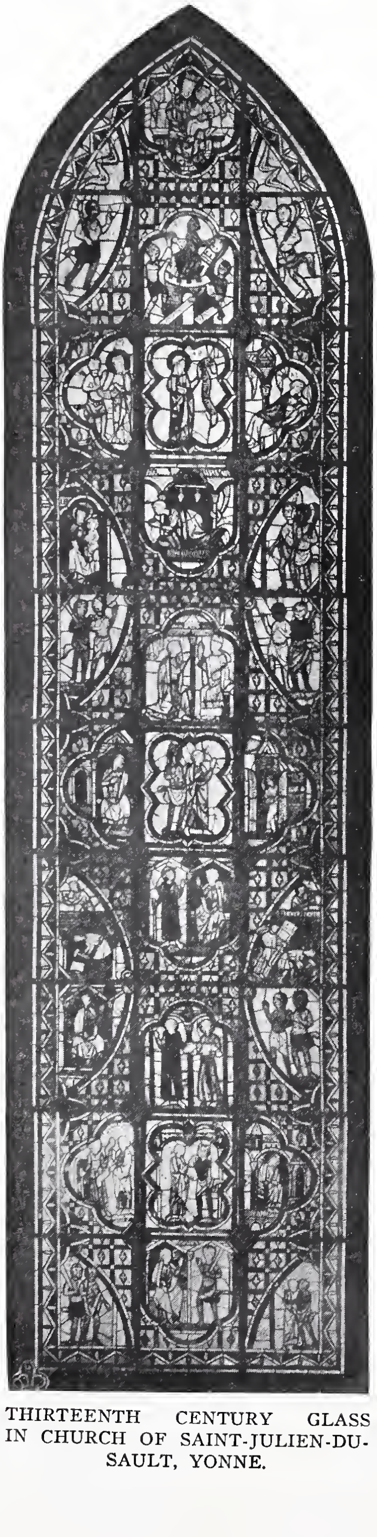


FRENCH STAINED GLASS OF THE THIRTEENTH CENTURY. PANEL IN THE COLLECTION OF MR. HENRY C. LAWRENCE, NEW YORK.

painted upon tables papers and books so realistically that almost all visitors attempt to pick them up, would be an artist of the highest order. As a matter of fact, realism in itself is not a highly desirable quality, even in pictorial art. The modern schools of painting are revolting from it, and the best critics are preferring more and more the unrealistic Italian painters of the fourteenth and fifteenth centuries to the realistic artists of later ages. If a painting has beauty of content, line, color, and composition, the realism is an entirely minor consideration; and how much more is this the case with stained glass, which, because of technical limitations, never should rival a painting!

The modern glass-painter who puts in his windows a great glaring figure of realistic character achieves obviousness at the expense of intellectual value. Such figures we take in at a glance, or at half a glance. They are eminently unarchitectural, break the structural contours and call the attention immediately from the large divisions. Like an advertisement, they catch our eye; but like an advertisement also, they give us little in return for our attention. The carefully thought-out detail, the content of subject, the deep, strong, virile color — in short, the intellectuality of ancient glass — are painfully lacking in the great majority of these modern creations.

In regard to the coloring of medieval glass, it should be noticed that its effect is never obtained by the use of large fields. Small pieces of blue and red and other colors of primary hue are placed next to each other. From a distance these colors combine to form one tone of entrancing brilliancy. As Dr. Durham has called to my attention, modern art made the discovery that the finest color effects are produced, not by mixing the paint before it is put on the palette, but by placing bits of the elementary hues alongside of each other on the canvas and leaving the eye to fuse them. For example, if we want to produce a purple there are two methods of doing so. We may mix the blue and red paint together and then color our glass or our canvas, and this



THIRTEENTH CENTURY GLASS IN CHURCH OF SAINT-JULIEN-DU-SAULT, YONNE.

is the usual manner of procedure. The more effective way, however, and the Gothic way, is to place very small bits of blue and red beside each other and let the eye blend them to form purple. By this means the Gothic glass-painters not only achieved a richer and more vibrant tone, but they avoided running into obviousness by the use of broad fields of color. A window made on this mosaic system does not strike the eye to the same extent as would a window in which are used the same colors and in the same amount, but in broader fields.

(*To be continued.*)

GARGOYLE REPRESENTING JONAH AND THE WHALE—CHURCH OF ST.-GERMAIN-L'AUXERROIS, PARIS.

The DESTRUCTION OF HISTORIC BUILDINGS AS REVEALED *by the* OFFICIAL FRENCH WAR PHOTOGRAPHS

By THOMAS E. TALLMADGE

III.—Parish Churches

THE mighty walls of Reims and Soissons, by their vast extent and tremendous inertia, have succeeded in resisting, in part at least, the fury of the exponents of Teutonic kultur. But not so the little churches. These are what are known to the artillerymen as "one-shot" churches. In most cases their wounds are beyond the healing power of restoration, and in many cases the demolition has been absolute. This is obviously the result of the slight resistance offered to large shells, and, also, is owing to their frequent occurrence in disputed villages, where the entire town has been utterly destroyed by concentrated shell fire.

Many of these humble fanes were insignificant architecturally and historically; others are of the greatest archeological and architectural interest.

The greatest loss in the realm of ecclesiastical architecture, after the cathedral itself, is the ancient church of St. Remi at Reims, a building, according to A. Kingsley Porter, Transitional in style, begun on the site of an older church in 1005 A. D. Of this older church some traces remain. The greater part of the building, however, dates from the reconstruction of 1170. The choir was one of the most beautiful examples we had of Transitional architecture. Its flying buttresses were very ancient, dating from the latter part of the twelfth century. Romanesque monuments are rare enough, and the destruction of St. Remi is one of the greatest losses which we have been called upon to bear.

Of the smaller churches, Acy-en-Multien is the most important on account of the great archeological importance of its vaulting. In Acy-en-Multien, Mr. Porter is convinced, occurs the earliest ribbed vault in the Ile de France. In a letter to the author he says: "This I regard as the most important small church in northern France, and the one that contains the key to the puzzle of the introduction of the ribbed vault into France. . . . I think that the ribbed vault (under the tower) cannot be later than the year 1100." Our photograph does not seem to reveal any destruction of moment, but does not show this tower with its famous eleventh century vault.

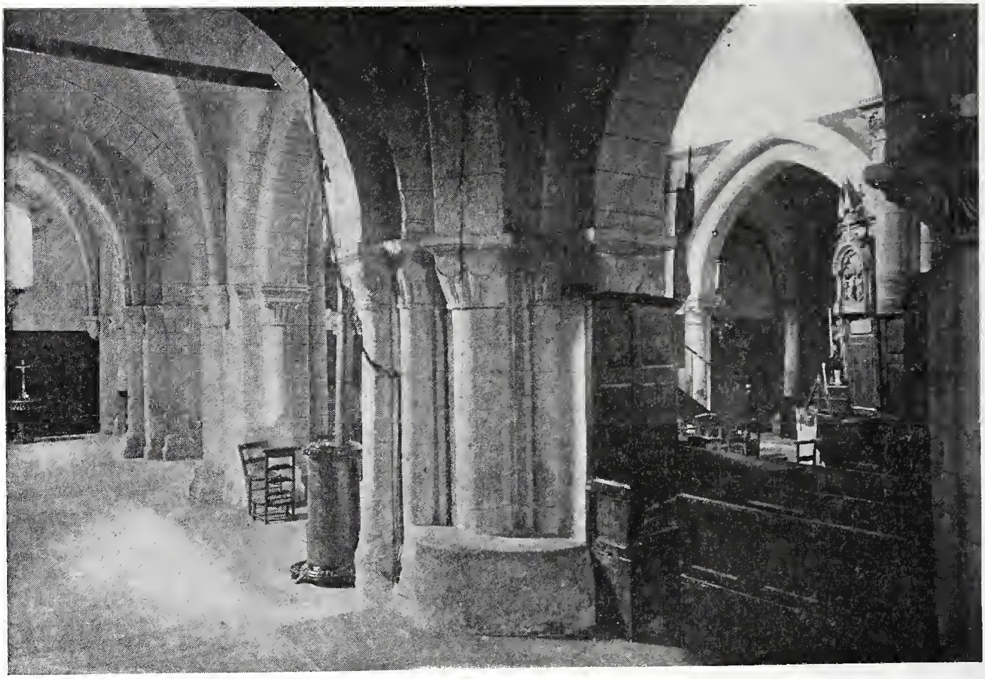
What Acy-en-Multien is to the protagonists of the thesis that the ribbed vault was imported, Rhuis, in the Department of the Oise, is to M. Pontalis and his distinguished confréres who believe that the ribbed vault is indigenous. In view of this controversy the loss of these two monuments would be irreparable.

The church of Tracy-le-Val, Oise, according to André Michel, in the "Gazette des Beaux Arts," is utterly destroyed. It had a famous octagonal tower resting on a square base, the transition being effected by the sculptured figures of angels. The sanctuary was vaulted in the Lombard style, and the façade a gem of Romanesque design.

Vailly, in the Department of the Aisne, was famous for its façade. Its interior, with Renassance vaulting in the aisles, is entirely destroyed. It dates from 1170 to 1230. The façade, with its beautiful ornament, as the photograph shows, is badly battered. The tower, which appears to be demolished, dates from the twelfth century.

Roye-sur-Matz, Oise, is a curious high-shouldered church, with a round-arched portal and an early rose window. The roof and, presumably, the interior are badly damaged.

St. Remi, in the historic town of Fontenoy, was an ancient church, the nave, according to M. Lefevre Pontalis, dating from about 1110. The choir was barrel



ACY-EN-MULTIEN.

vaulted, and terminated in a semicircular apse, which we see in the photograph breached by a great shell. The tower (lower part about 1140; upper portion thirteenth century) is almost destroyed.

Other churches, of which we have photographs, but about which I have been unable to obtain documentary evidence, are as follows:

Berry-au-Bac, Aisne, is apparently of the fourteenth century. The church has transepts and a semicircular apse. The vaults of the nave and crossing are destroyed, together with the tracery of the apse.

The name of the small chapel in connection with a château in the valley of the Somme is not given on the photograph. It is of the fifteenth century, with an altar and with niches that contain statues in the style of Francis I. It is generally wrecked by shell fire.

Les Hurtus, Marne, is an ancient building of the early thirteenth century, with a semicircular apse. The photographs show the utter destruction of the vaults of the choir and apse.

At Louippy, Meuse, is a small church in connection with the château. It is Romanesque in style, though possibly the tower may be modern. The tower, vaulting and roof are destroyed.

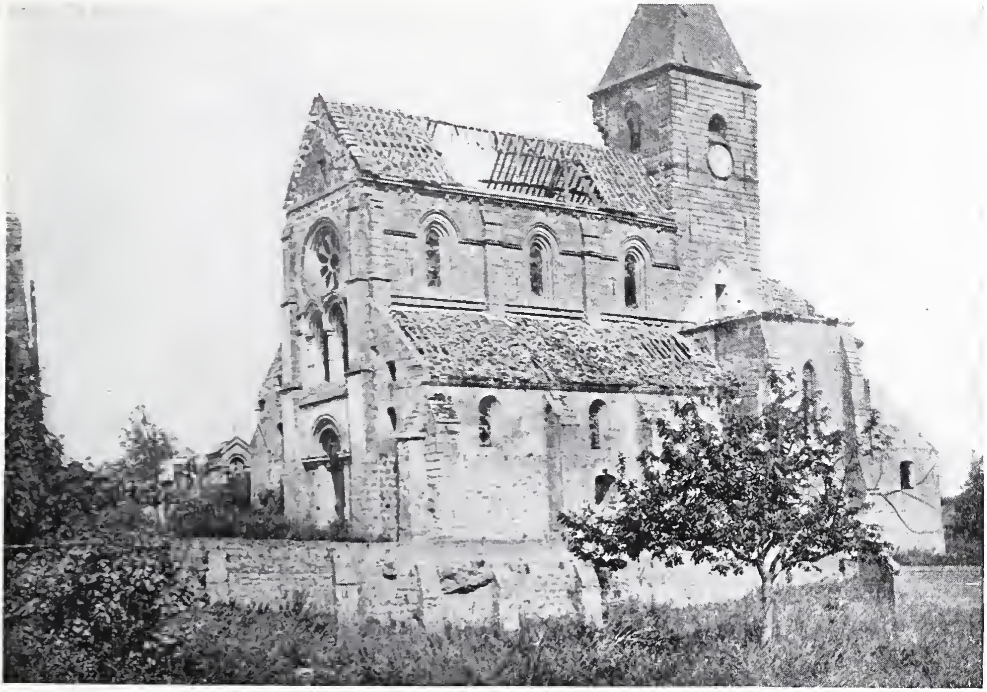
At Haurupt-le-Montois is a building in the Transitional style, with a tower either modern or thoroughly restored. The tower walls and vault are practically demolished.

Flirey, Meurthe et Moselle, is so badly wrecked that it is impossible to determine the period, although apparently it is Gothic of the fourteenth or fifteenth century.

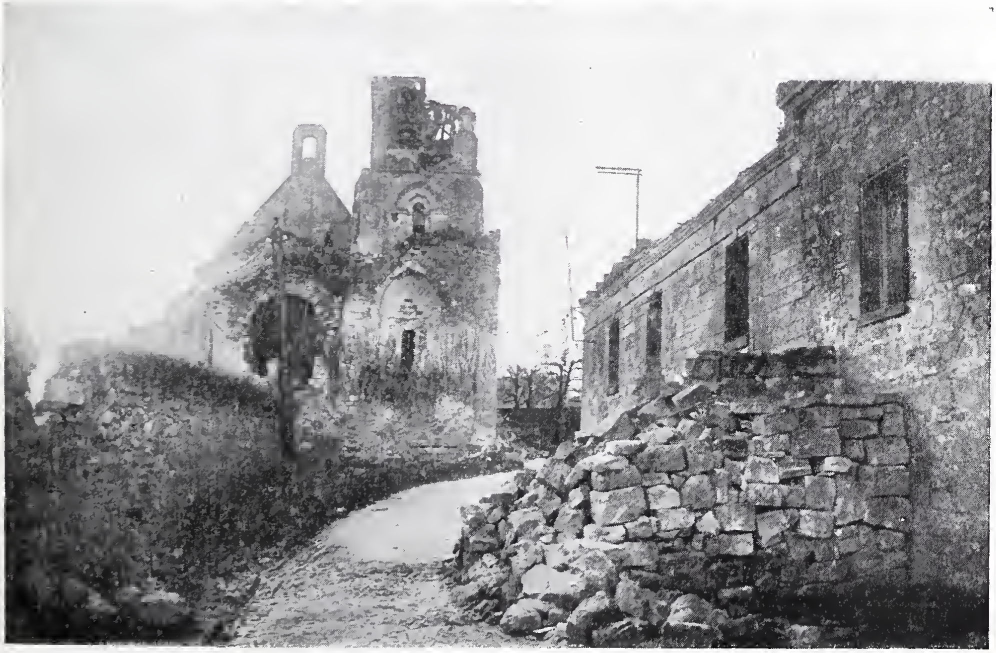
Beauzée, Meuse, is a very interesting church in the Flamboyant style, built on the hall church plan, with the aisles of the same height as the nave. The tracery and the tower are graceful and interesting. The vaults are largely destroyed and the vaulting damaged in every part.

Of Marquivilliers, Somme, the photograph shows only a corner of one aisle, entirely wrecked, with a few moldings, which indicate twelfth century workmanship.

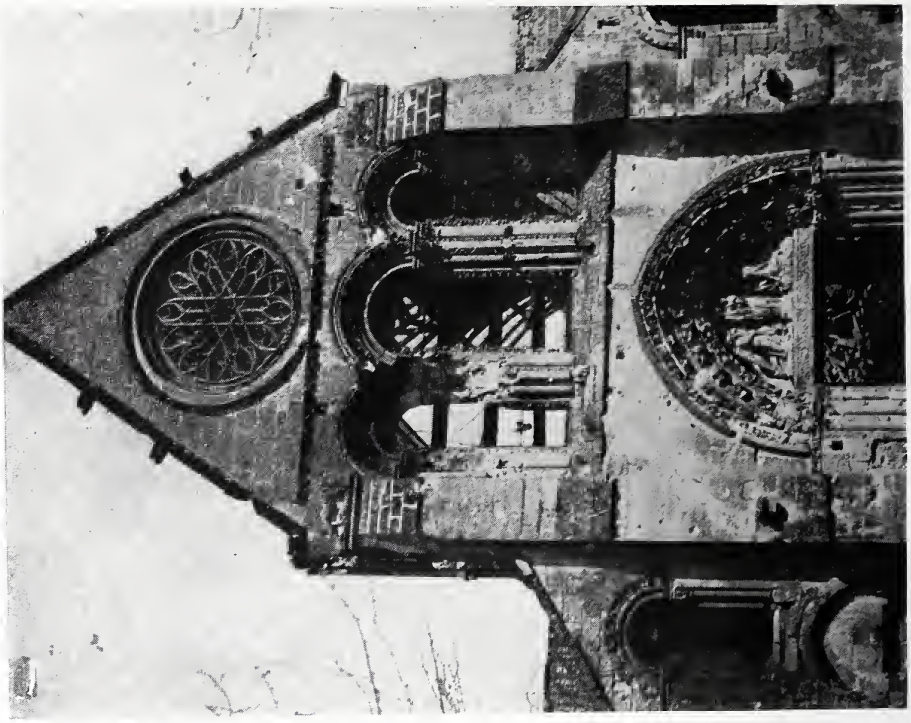
The Church of Souain is a formless pile of débris.



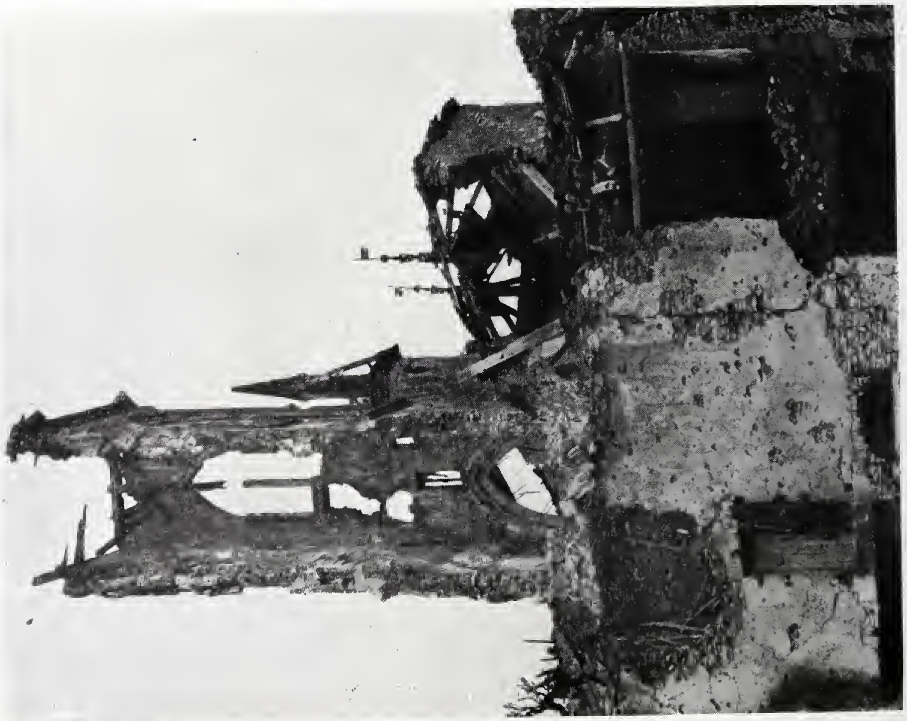
ROYE-SUR-MATZ.



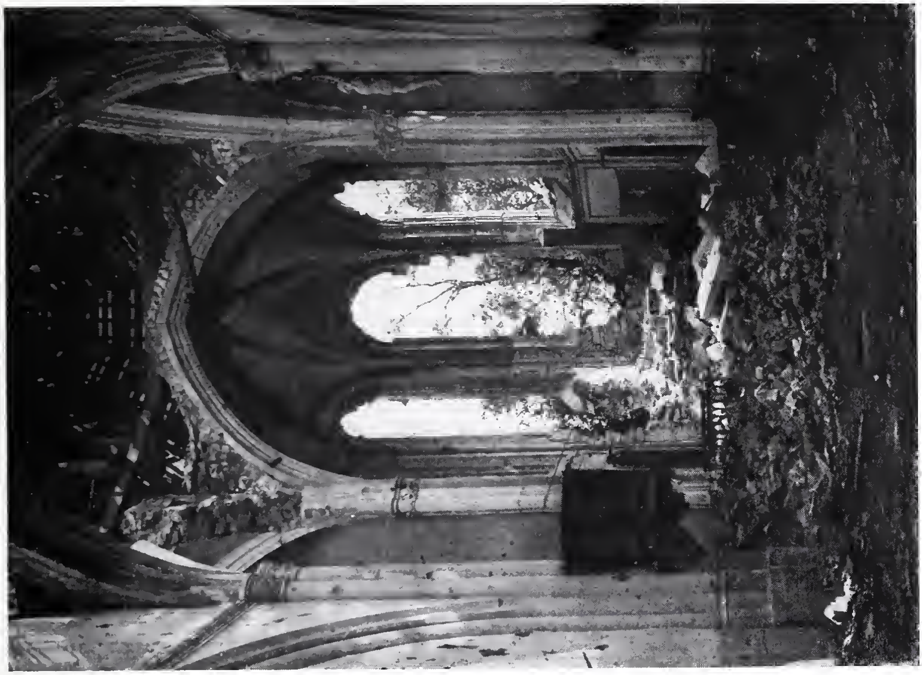
ST. REMI, FONTENOY.



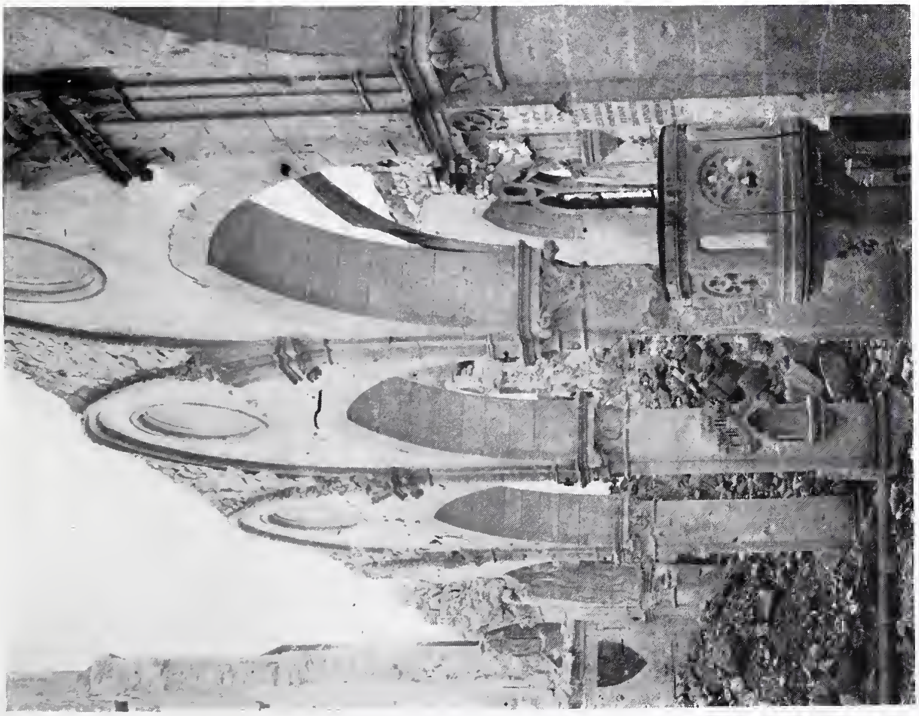
VAILLY, AISNE.



FLIREY, MEURTHE ET MOSELLE.



BERRY-AU-BAC, AISNE.



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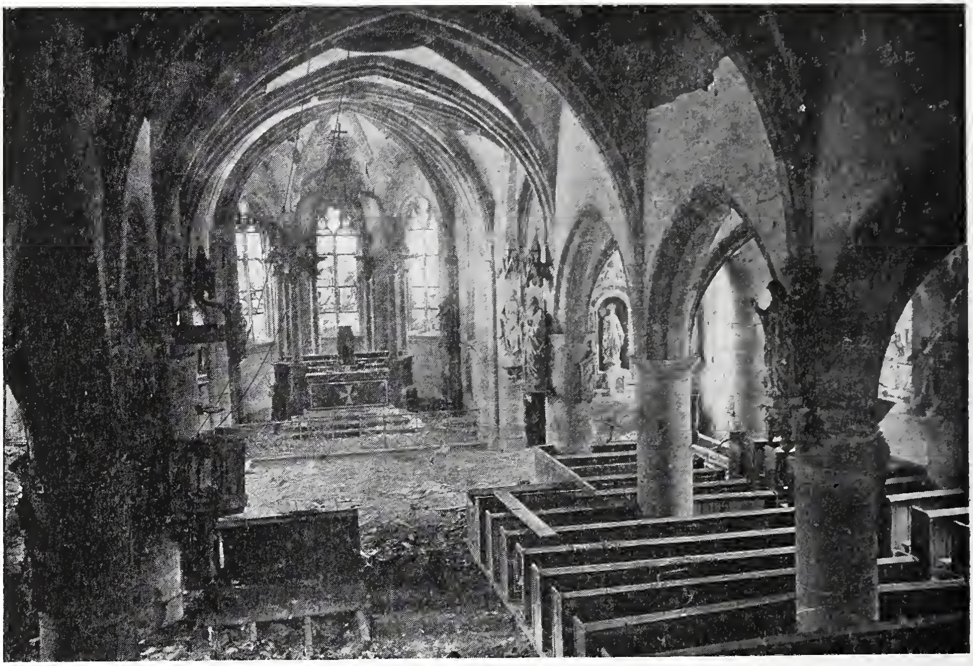
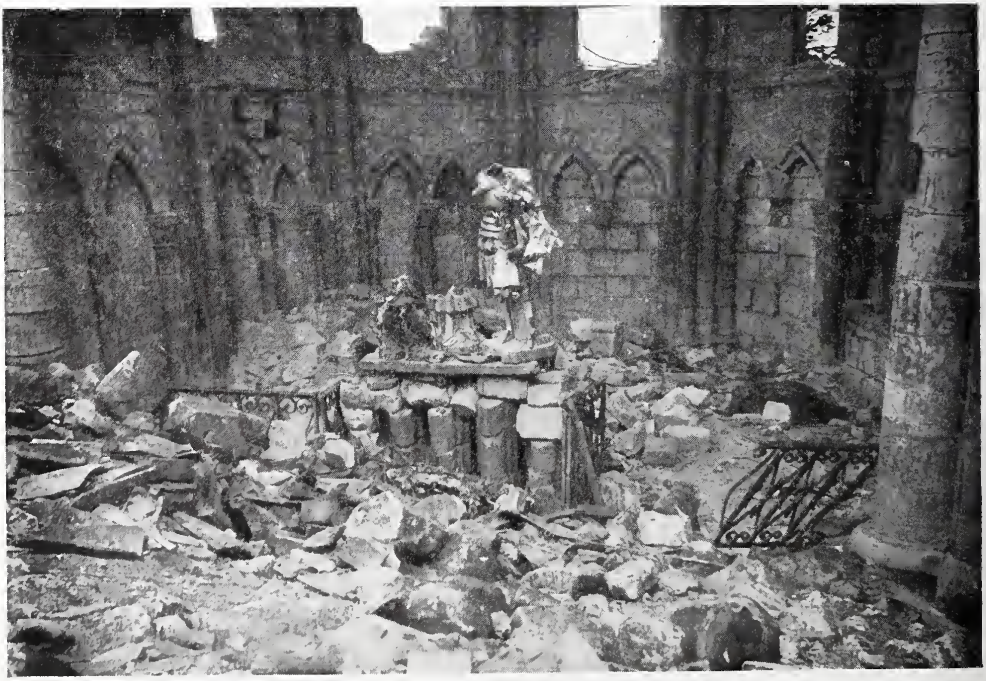
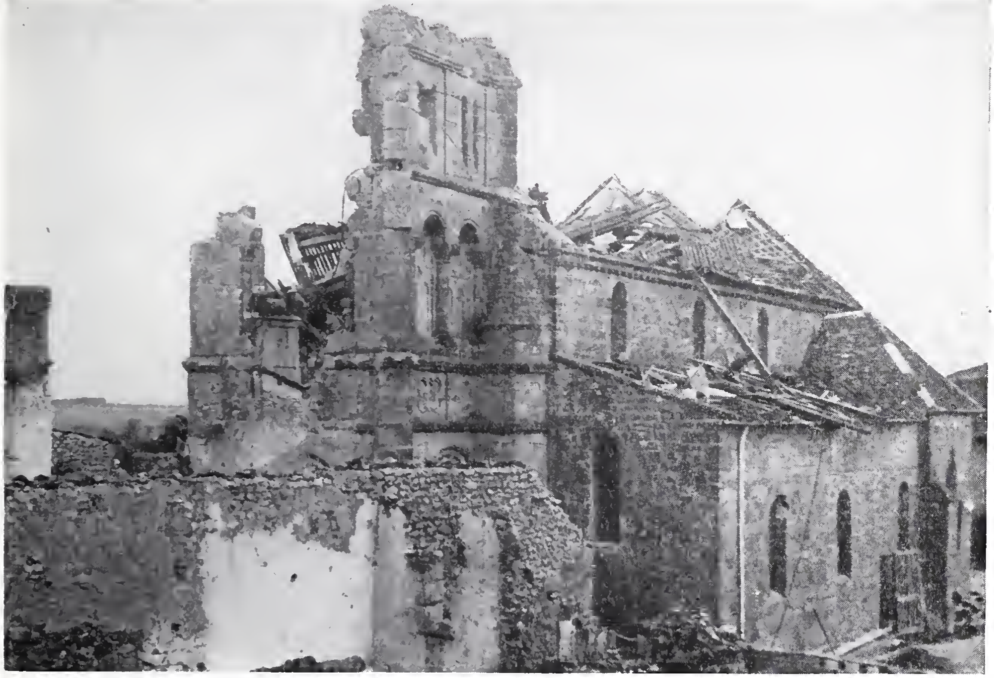


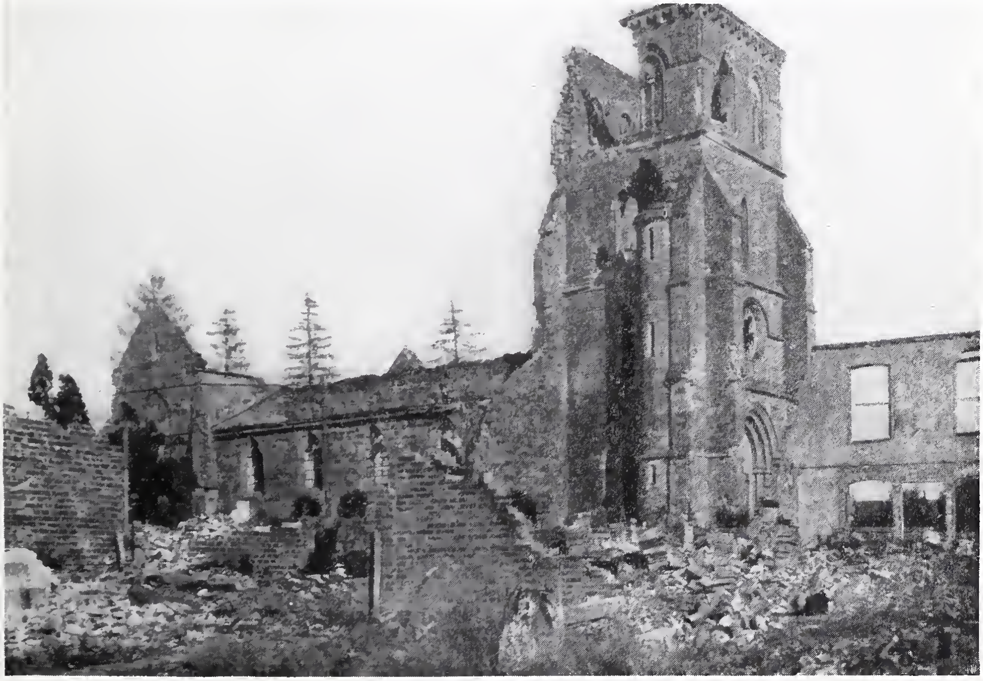
CHAPEL OF A CHATEAU IN THE VALLEY OF THE SOMME.



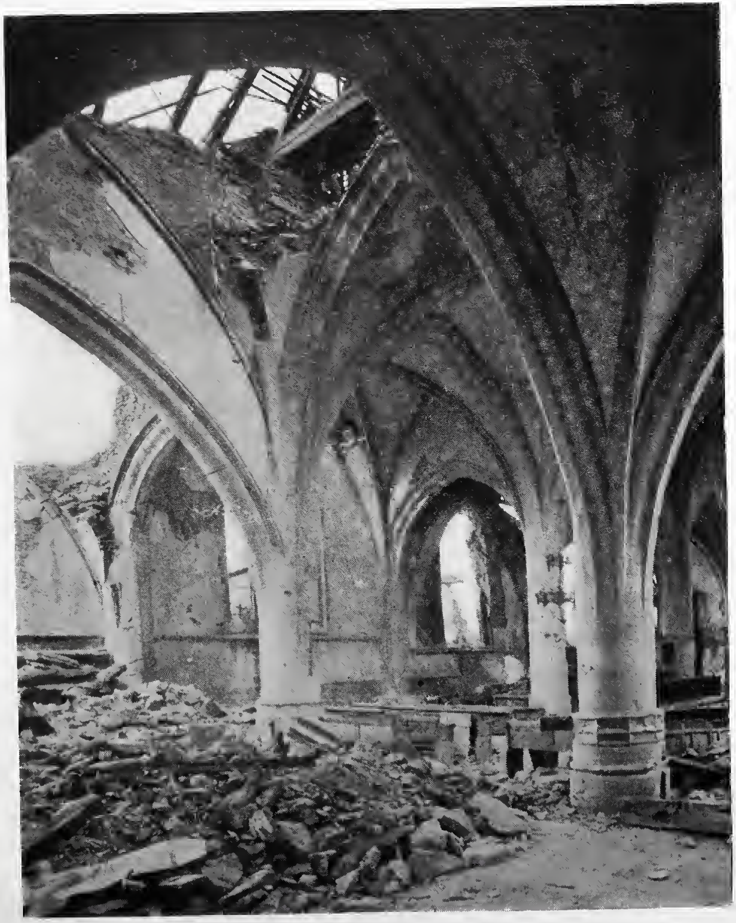
LES HURTUS, MARNE, CHURCH CHOIR.



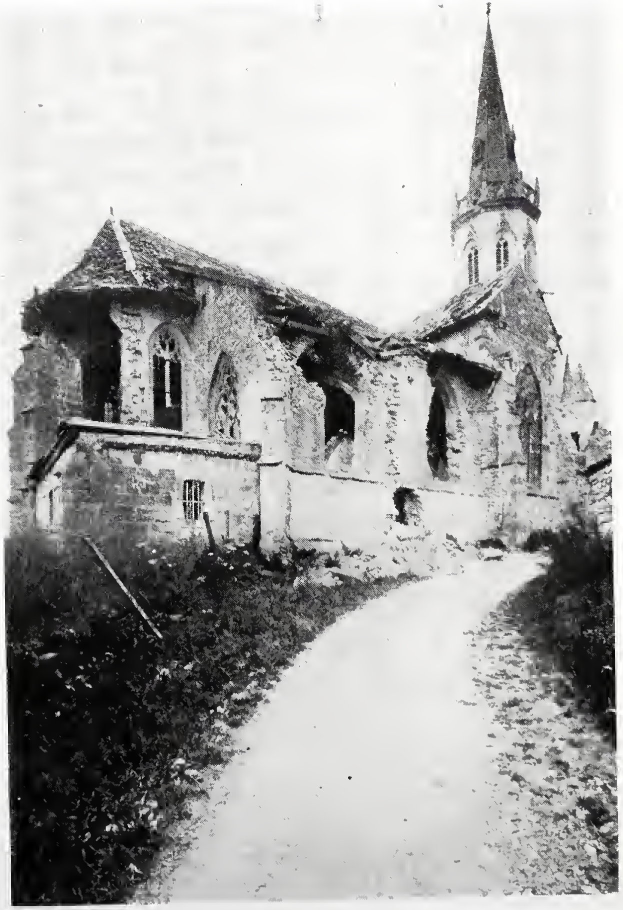
CHURCH OF A CHATEAU AT LOUIPPY, MEUSE.



HAURUPT-LE-MONTOIS.



BEAUZEE, MEUSE.



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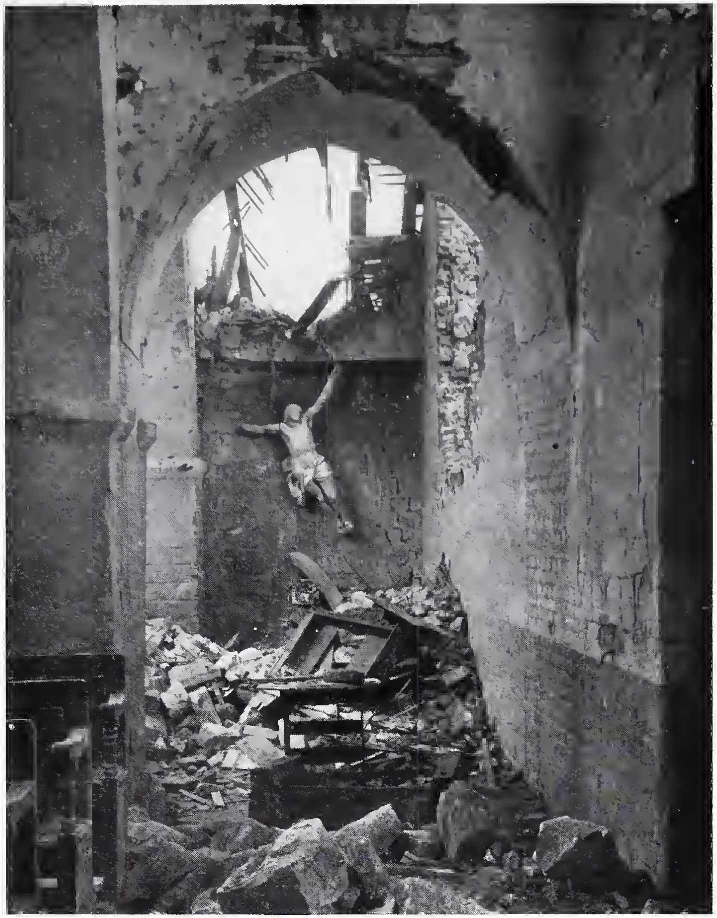
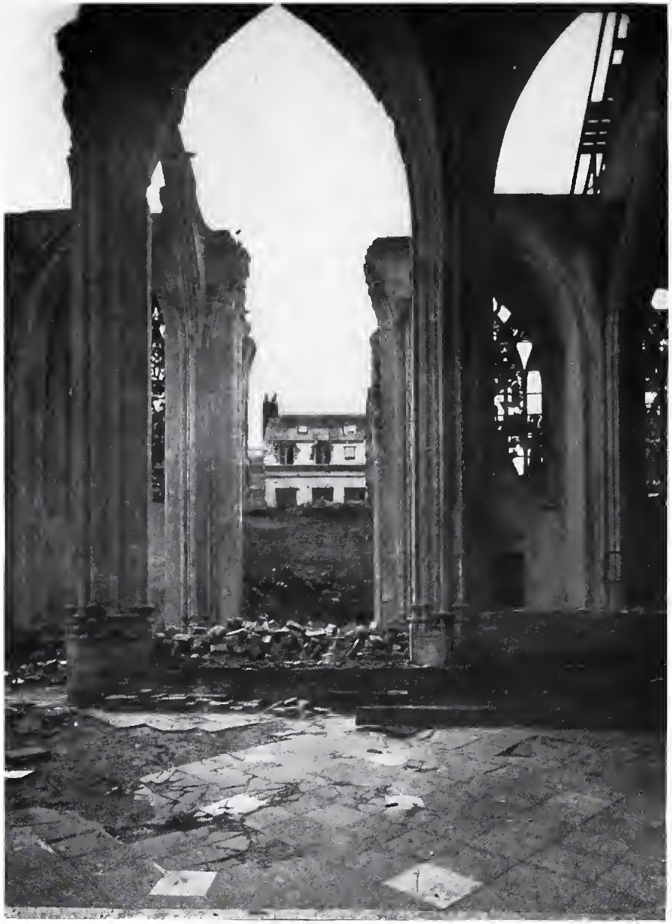
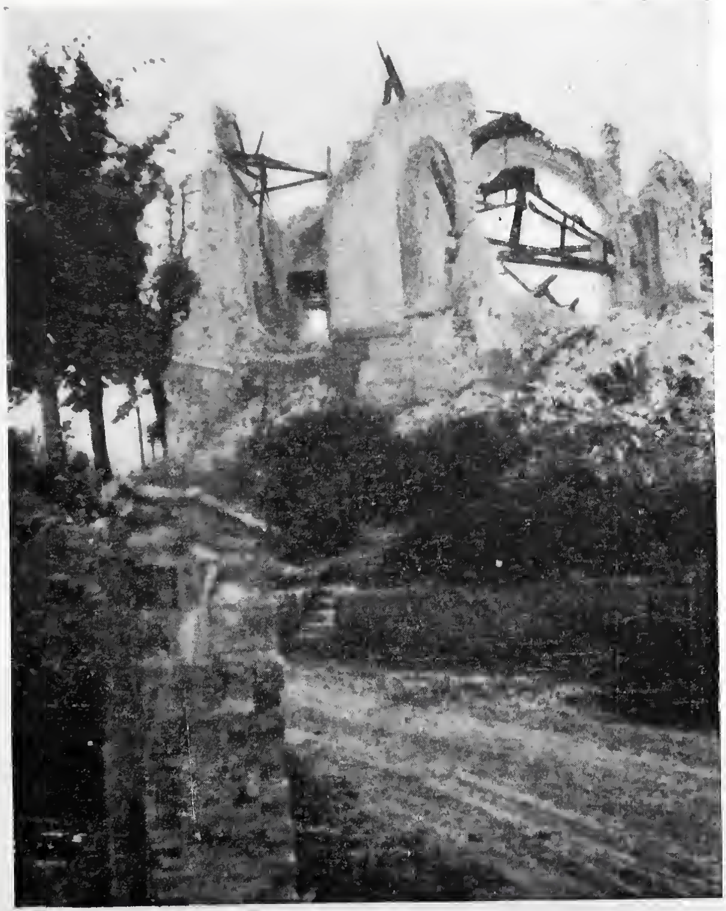


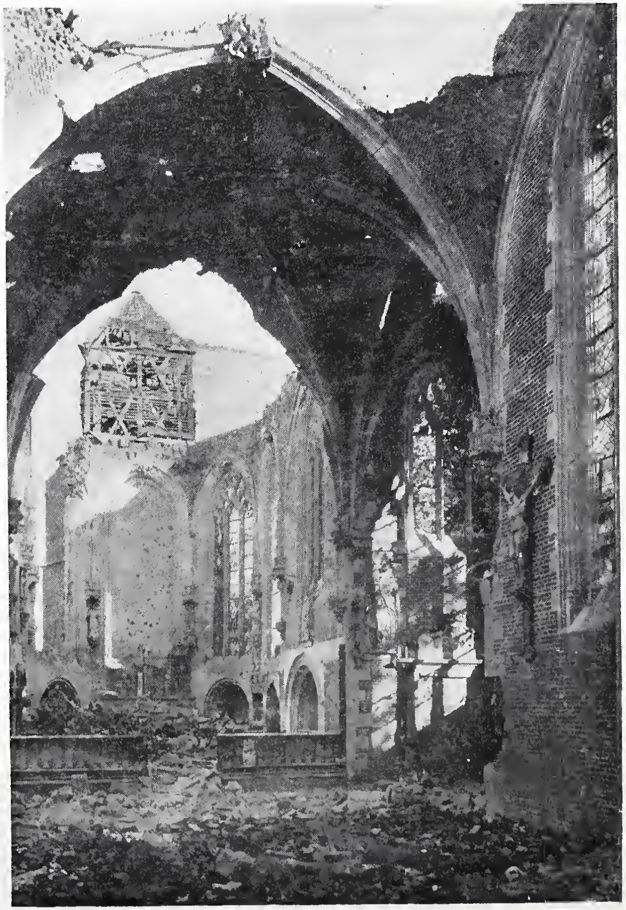
MARQUIVILLIERS, SOMME.



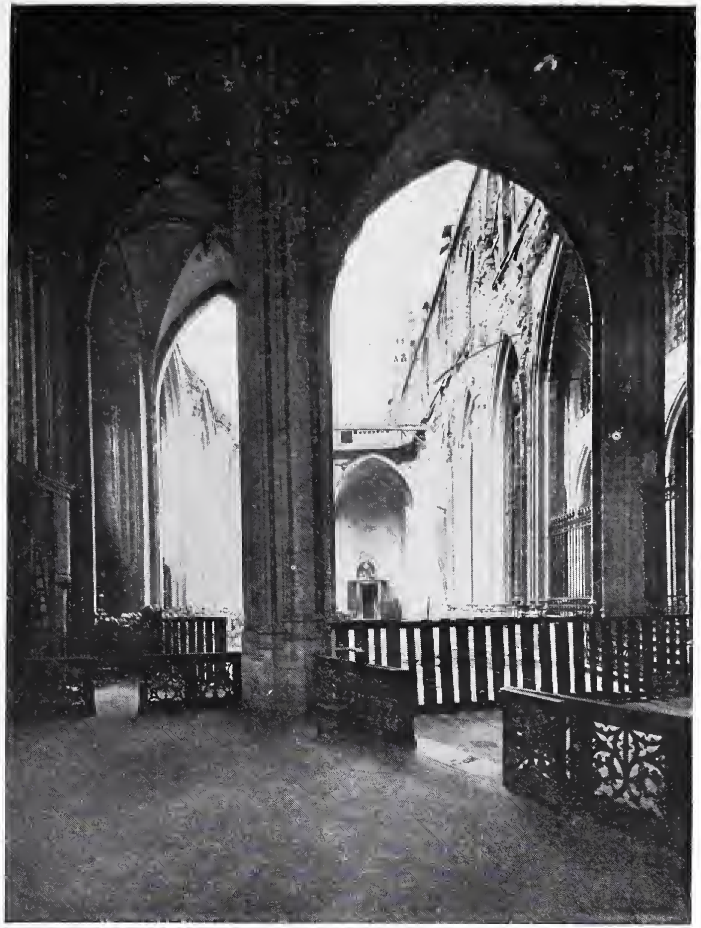
ST. ELOI, SOISSONS.



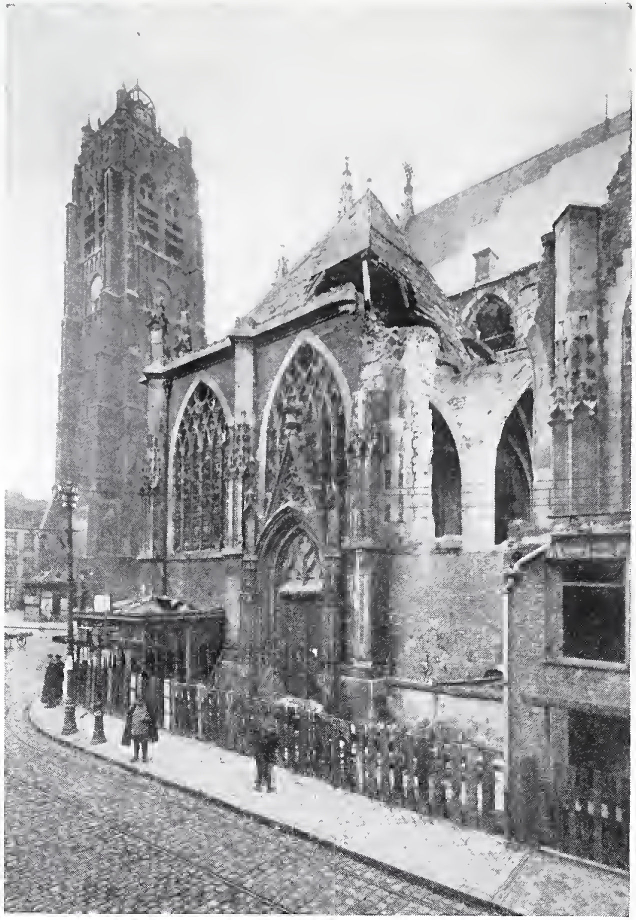
SOUAIN.



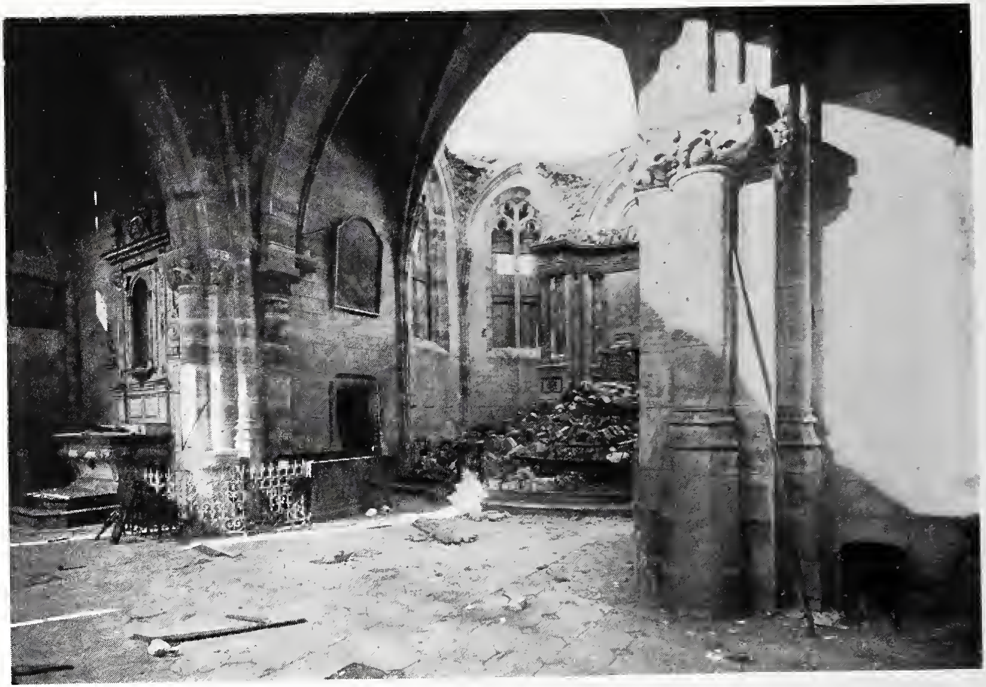
CILLOLAY.



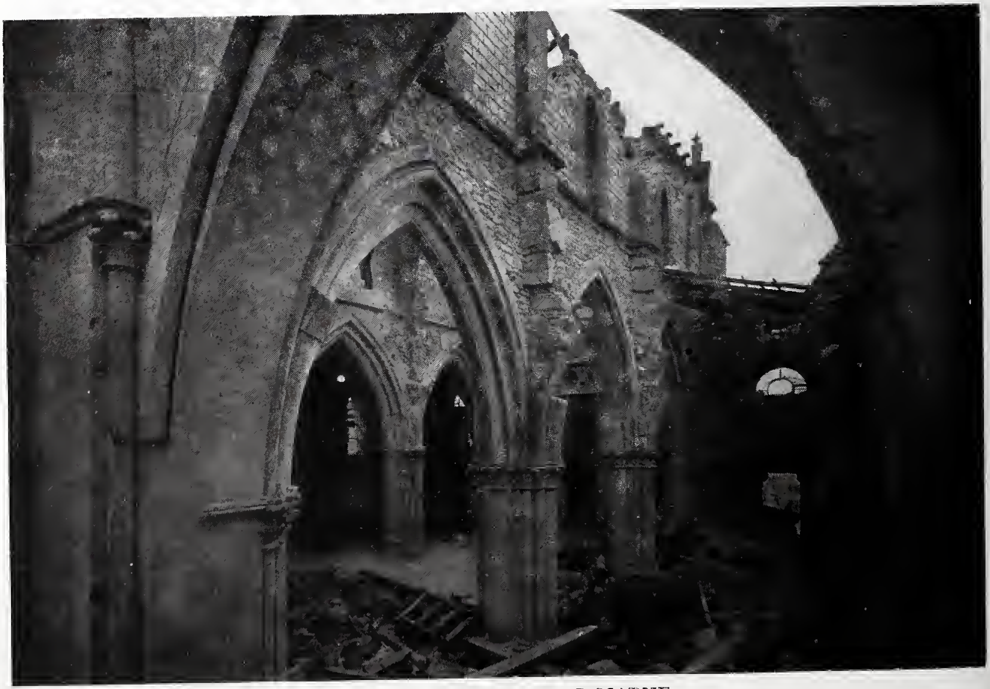
ST. ELOI, DUNKIRK.



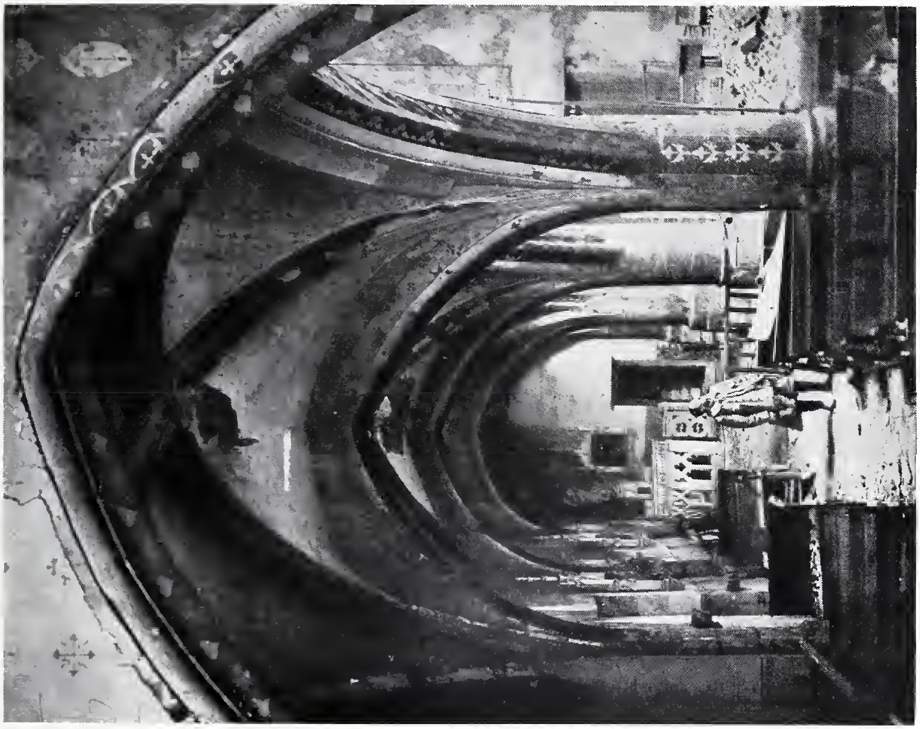
ST. ELOI, DUNKIRK.



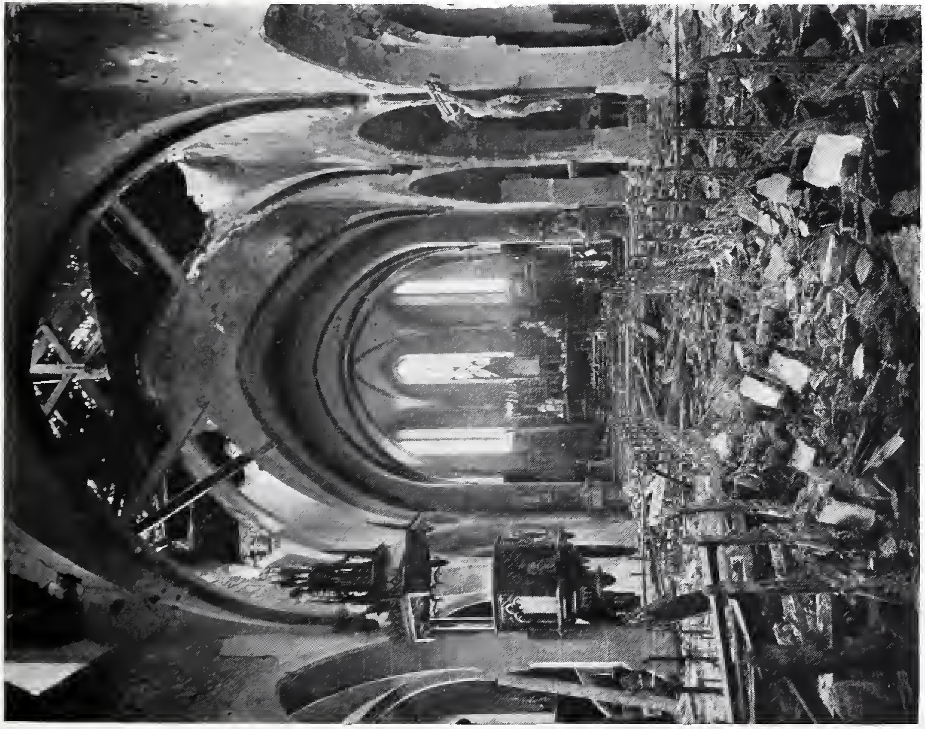
MAUZET-SUR-MARNE.



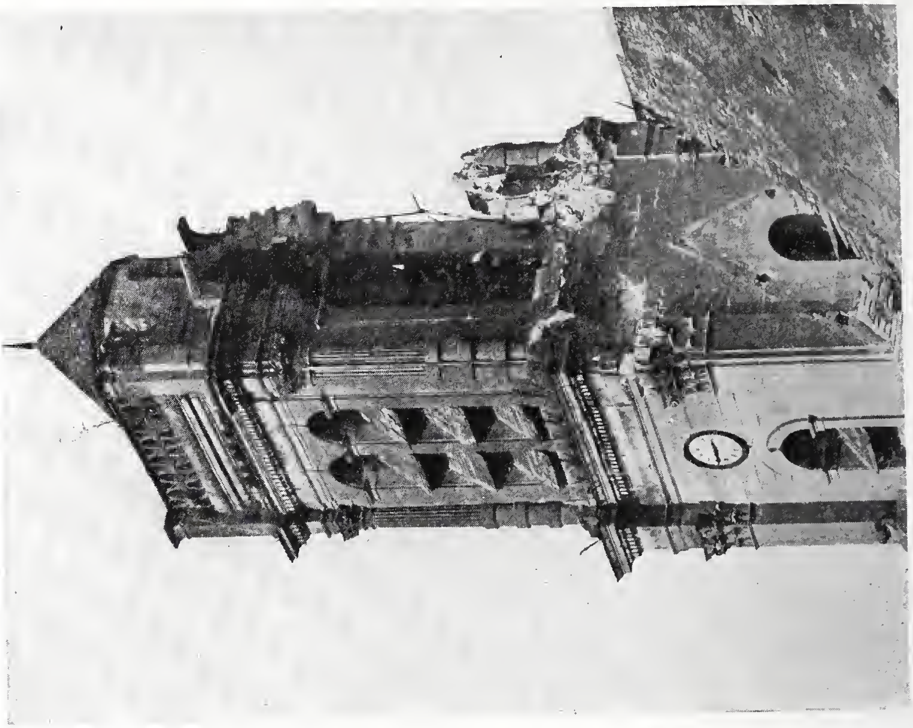
BETHENVILLE-SUR-MARNE.



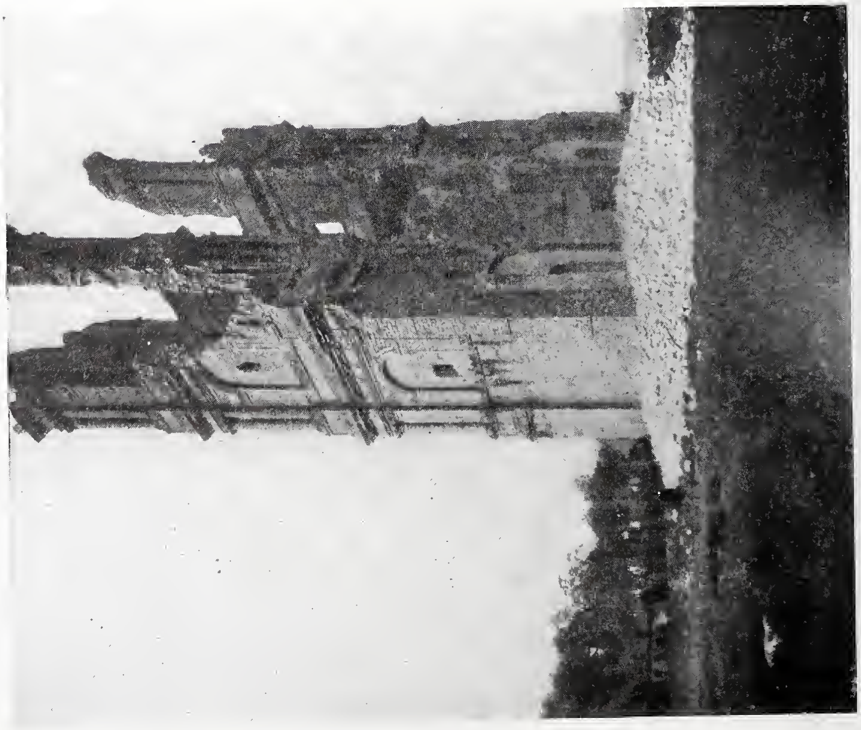
CLERMONT-EN-ARGONNE.



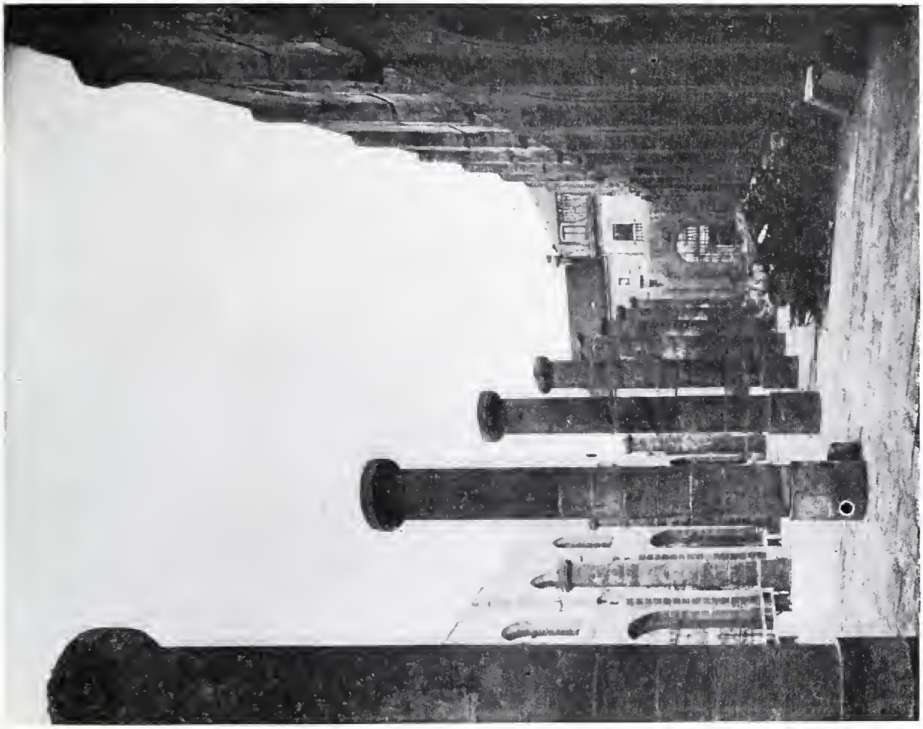
STEINBACH.



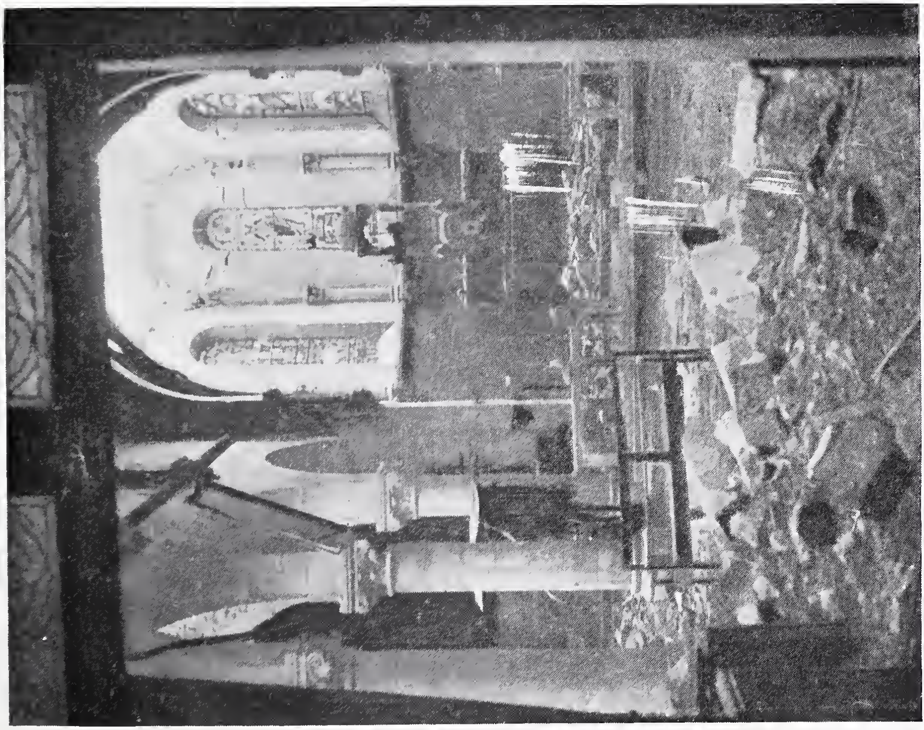
ABBEY OF ST. LEGER, SOISSONS.



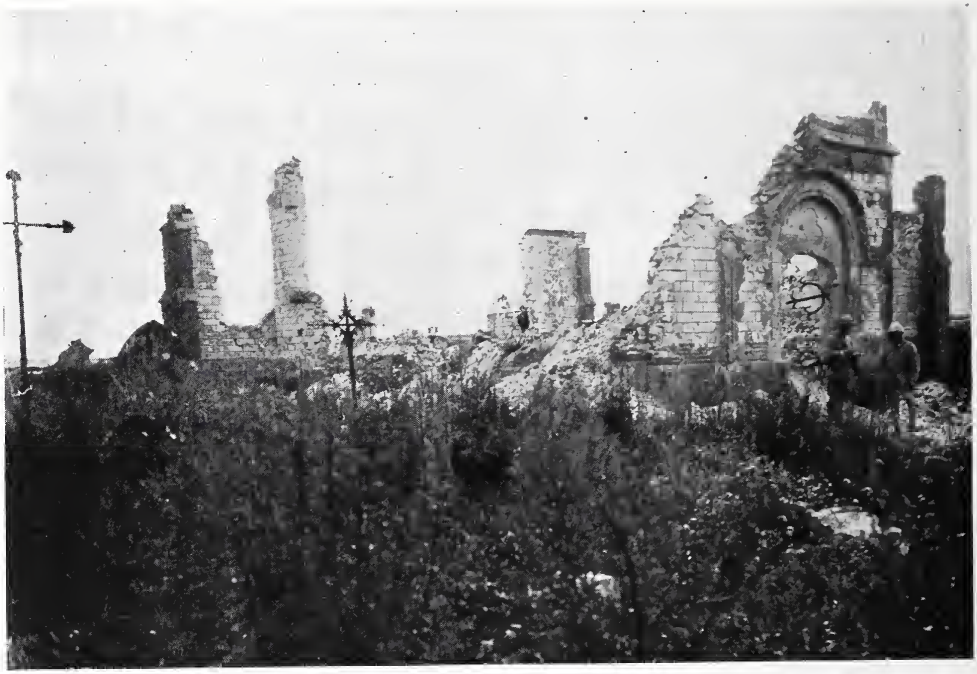
ABBEY OF ST. ELOI, MONT ST. ELOI.



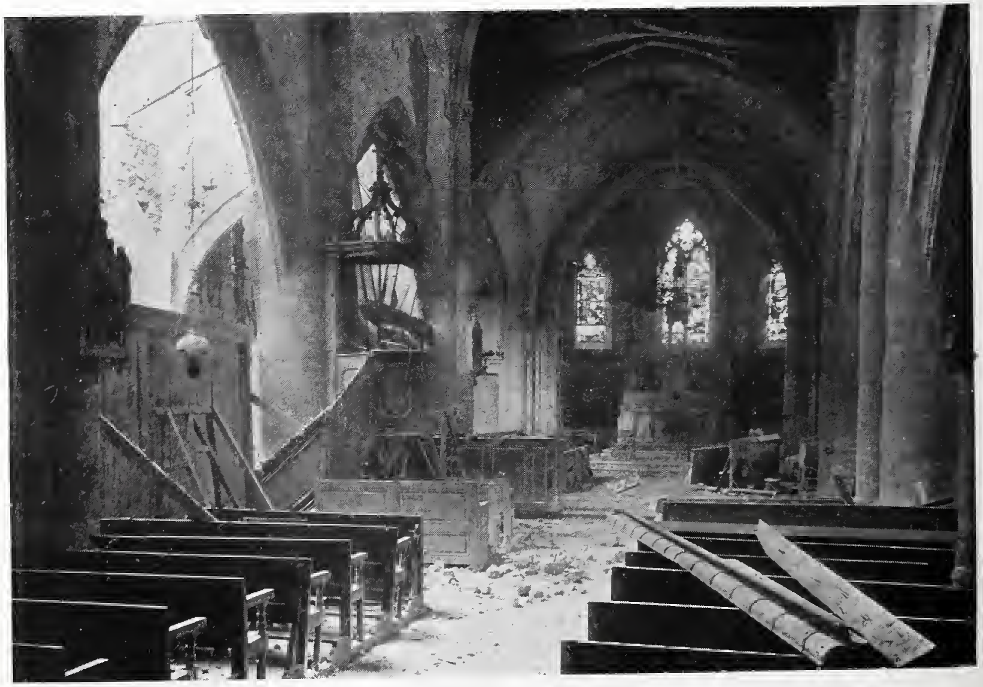
RAON L'ETAPE.



SILLERY.



PERTHES.



NEUVILLE-AU-PONT.

Cillolay, in the valley of the Somme, contained a large and beautiful church of brick and stone in the late Flamboyant style. Now, only the side walls and the vaulting of the crossing remain intact.

At Mauzet-sur-Marne there is a small church with mingled Romanesque and Gothic motifs, possibly modern, although the Renaissance altars appear to be antiques. The vaulting of the choir and the apse has been destroyed.

The Church of St. Eloi, at Dunkirk, is a building in the Flamboyant style, showing Flemish influence. Serious damage has been done to the exterior and the vaulting of the nave is entirely destroyed.

In Steinbach there is a three-aisled church of uncertain age, with German motifs. The vaulting of its nave is, for the most part, destroyed.

At Clermont-en-Argonne is a curious and interesting church with frescoed decorations, apparently of the fifteenth century. Although the photograph shows but one aisle, it seems to indicate that the vaulting of the nave has been destroyed.

The Abbey of St. Eloi, at Mount St. Eloi, is a Renaissance building, of which only one corner now stands—in ruins.

At Bethenville-sur-Marne there is a thirteenth century church, the nave and aisle vaulting of which have been destroyed.

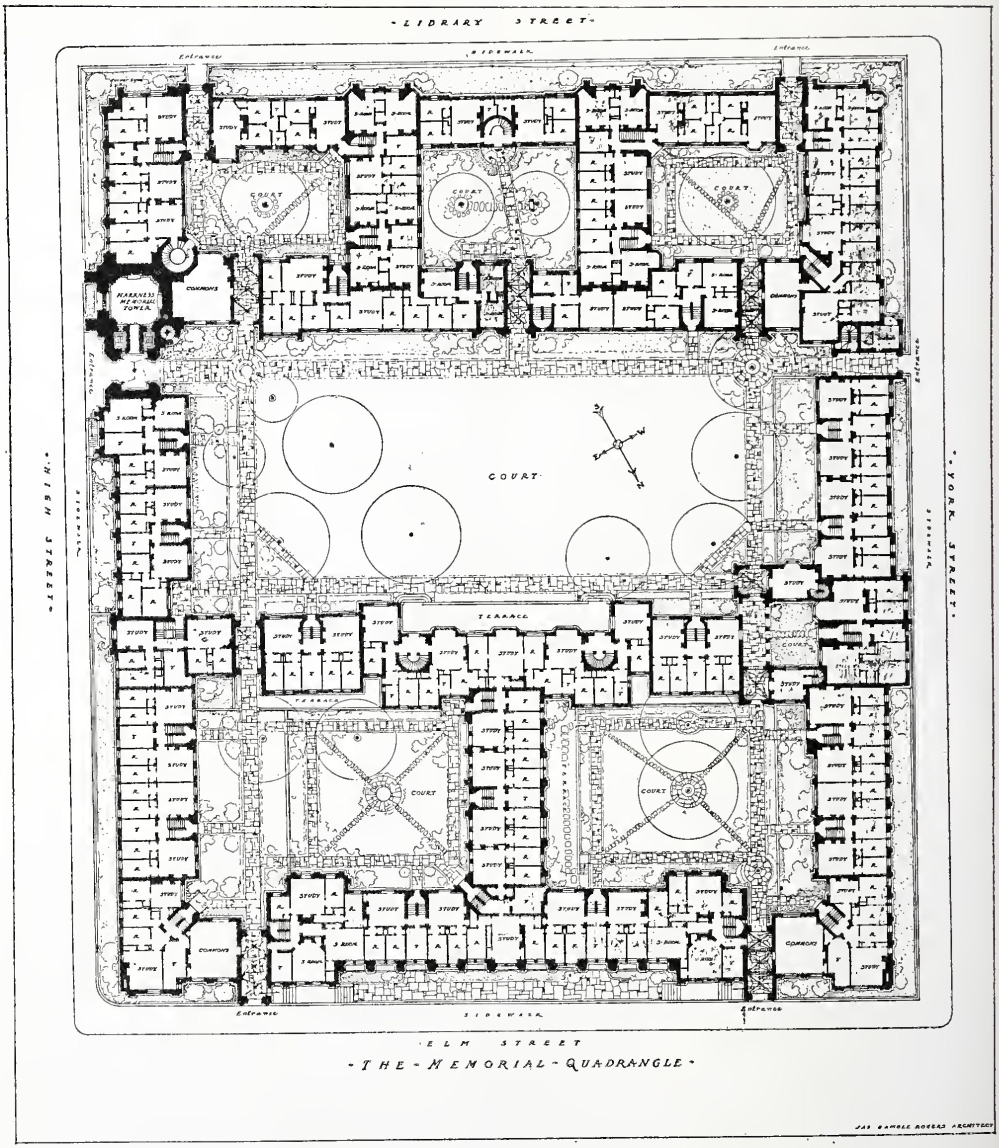
The Abbey St. Leger, at Soissons, is a Renaissance building in the style of Henry IV. Its belfry is half destroyed.

The church at Sillery is of uncertain age, possibly modern. The vaulting of the apse has been destroyed.

Neuville-au-Pont contains a small church of the fifteenth century. Its nave and aisles have been wrecked.

The church at Perth is entirely destroyed.

What eloquent and touching testimony the ruins of these little churches bear of the architectural vision and technical skill of their creators—the parish priests and the village masons! Like simple but exquisite flowers, clustered about the giants of the forests, they dot the plains of the Ile de France in the shadow of the great cathedrals, rejoicing in their strength and mutely sharing in their destruction.



PLAN OF THE MEMORIAL QUADRANGLE OF YALE COLLEGE. JAMES GAMBLE ROGERS, ARCHITECT.

The Memorial Quadrangle of Yale College

James Gamble Rogers, Architect

By Marrion Wilcox

OXFORD, I doubt not (Oxford's town, university, meadows, Cher, Isis and all, altogether), would have a part of the charm it now owns—that of an intimate, far inland English landscape, so well painted and so long ago—even if the ancient university there were less obviously in conceded possession of the heart of the still more ancient town. But shall we say, or can we say, *all* of the present and ever-present charm? Surely Oxford would not have that unless the university and the town had learned to grow old together, yet to keep young together incorrigibly—to stay young bravely, hopefully, and in union. Oxford might once have contrived to divorce college from town topographically. Mr. Aymer Vallance, in his delightful book, "The Old Colleges of Oxford," touches upon the relative topographical situations of university and city there, and says that the latter "was of no great dimensions, nor was it laid out to accommodate the university"—which nevertheless "has thriven and expanded by a persistent policy of absorption." Does not the reader think that a wise choice was made in that instance; that new structures raised on entirely new sites, having no sort of historic continuity, would have fallen short of an architectural composition like "The High"; that sometimes it is an essential error to found and establish colleges and college buildings quite outside of and quite away from the towns they belong to, the towns that belong to them? For my own part, I certainly entertain that opinion; and so I am heartily glad that the Memorial Quadrangle of Yale College will stand at or very near the centre of the dear old town of New Haven.

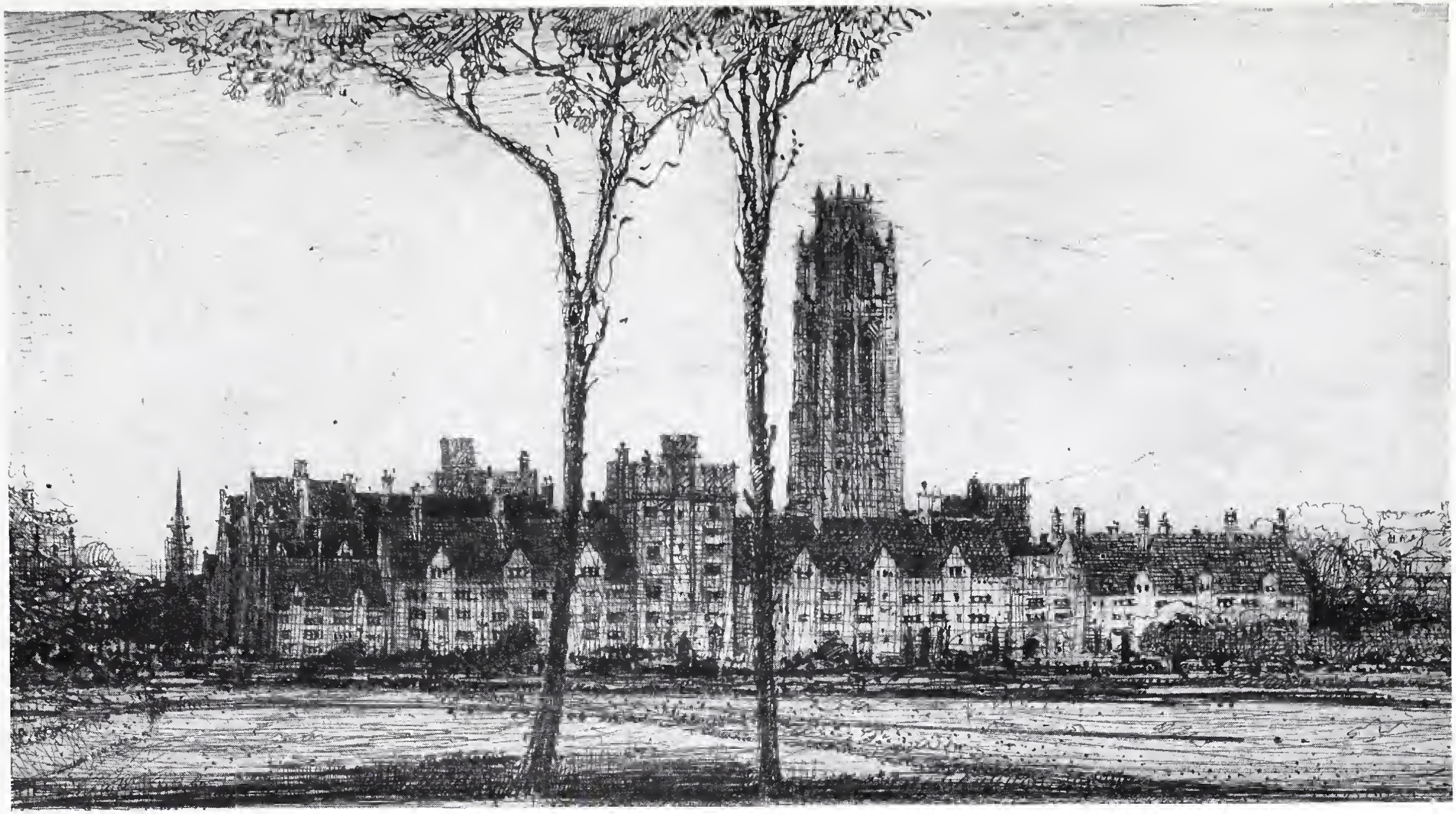
The cornerstone of the memorial quadrangle, a gift to Yale in memory of Charles William Harkness, of the class of 1883, from his mother, Mrs. Stephen Vanderburg Harkness, was laid October 8, 1917. It will occupy the entire block bounded by High, Library, York and Elm streets. The president of the university says in his annual report (page 19) that "as Mrs. Harkness arranges to give the buildings and meet all expenses of erecting them, whatever those may prove to be, the exact amount of the gift cannot be stated; but it will in any event be very large." The *Yale Alumni Weekly* says: "For years the need of housing all the College students in Campus buildings has been one of the most serious of Yale problems. The munificent gift of these dormitories, to house over 600 undergraduates, most satisfactorily solves this problem, which was certain to have become a serious one again the moment the war was over. In the process of doing this, other problems likewise, and unexpectedly, have been solved: the University receives a new steam heating plant on York street near Grove, and the long-delayed erection of a proper

Peabody Museum on the Hillhouse grounds at the head of Hillhouse avenue is now assured. The result of the whole undertaking will be the largest and most notable building operation that Yale University has ever seen, and one of the greatest of any American university. The gift of these dormitories is in memory of a graduate to whom his college life meant much, and who, all his life, quietly did much for Yale. The building will be known as The Memorial Quadrangle, the beautiful tower alone to bear the name of Mr. Harkness."

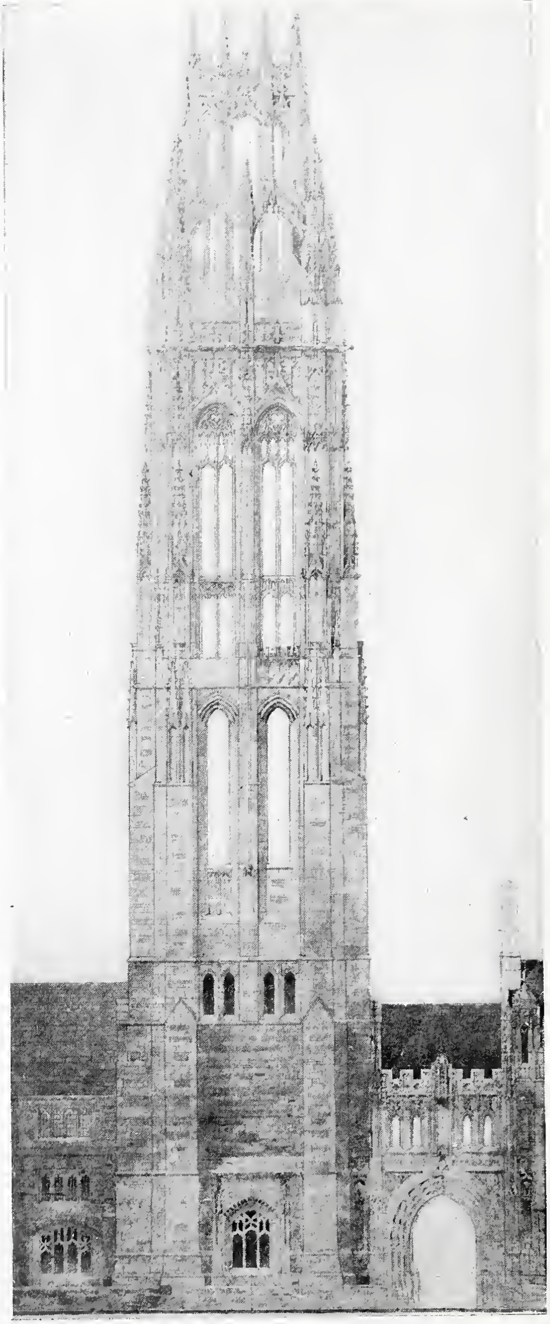
The plans of the architect, Mr. James Gamble Rogers, who was graduated at Yale in 1889, show that the great "Quad" is formed by the grouping of six courts, of which the largest extends through the block from High street to York; the smallest (three courts) occupying the Library street side, where the buildings are to be low, and those of intermediate size (two courts) being surrounded by the higher buildings on the Elm street side. The dormitory buildings of varying heights surrounding these courts will all be of stone, and will be examples of English Gothic architecture. There will be two entrances from the north, two from the south, one from the west and one from the east. The last-mentioned is the main entrance, and adjoining it will rise the Harkness Tower, the most impressive feature of the entire design. The studies and bedrooms will be grouped in accordance with the traditional "entry" system, and in each block of dormitories there will be "commons" halls. A sunken area, or moat, surrounding the entire group "will not only protect the buildings from marauders, but also relieve the height of the lower structures." As actually planned, the whole group will supply accommodation (1,266 rooms in all) for 630 students. It is thought that the time required for building operations will be more than two years.

Our readers will remember that the old quads at Oxford are formed by buildings that as a rule have not more than two or three stories—unless they be towers or halls; that at the best periods a strong preference was shown for the two-story plan, as at Christ Church. Now, the same moderation is observed in that portion of the great quad at New Haven which runs along beside Library street and assuredly is not "too low for high praise." The thoughtful consideration bestowed by the architect upon this question of height, in its relation to the problems of the free admission of sunlight and utilization of land-surface, is worthy of special notice. The esthetic values of low buildings are recognized. Mr. Rogers has said that, as this was to be a group of dormitories only, it seemed fitting that the general effect should be entirely residential, or homelike; yet to accomplish this most advantageously it would have been necessary to make all the buildings low—which was precluded by the requirement in regard to housing such a large number of students. He decided, therefore, to make some small courts enclosed in low structures and some larger courts with higher buildings. This idea was developed into the accepted plan for a group of six courts, of which the largest (the "campus") is about 150 feet wide and 260 feet long. "Then, to get the fullest advantage of the southern sun," he placed the low structures at the southern, or Library street, end of the group, and the higher buildings at or toward the northern (Elm street) side; the dormitories extending along the "campus," from High street to York (east to west), being somewhat lower than those along Elm street, and having "here and there the roof slanted a story lower on the north side to facilitate just that much more the desired admission of all the sunlight possible." The revised plan and model, November 26, 1917, shows a still more marked reduction in the height of structures in this portion of the group.

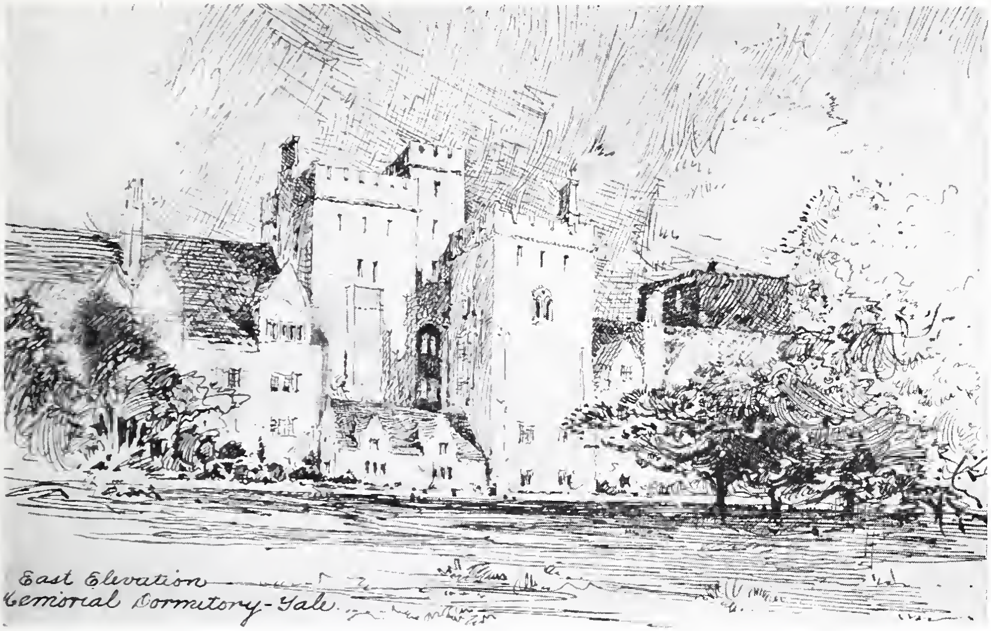
The architect's solution of problems relating to entrances, stonework and rooms may now receive our attention. He says that, inasmuch as there was not available any well-defined plan of the university buildings in general, his task was to design entrances that would be best at the present time, and which also would be most likely to prove serviceable in the future, as the university continues to expand. It seemed best, then, that the



WEST ELEVATION OF THE MEMORIAL QUADRANGLE OF YALE COLLEGE. JAMES GAMBLE ROGERS, ARCHITECT.



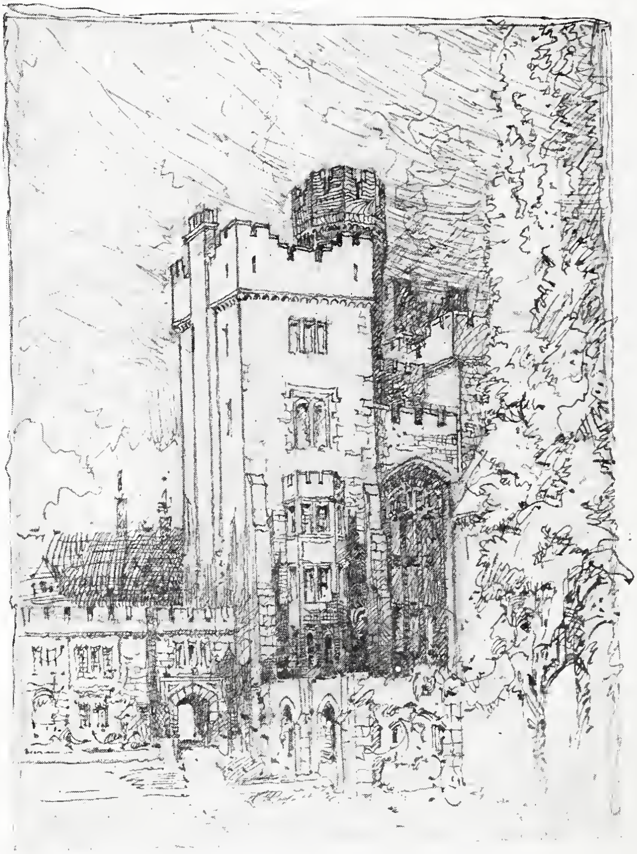
HARKNESS TOWER, AT THE MAIN
(EAST) ENTRANCE TO THE MEMORIAL
QUADRANGLE OF YALE COLLEGE.
JAMES GAMBLE ROGERS, ARCHITECT.



DETAIL OF EAST ELEVATION—THE MEMORIAL QUADRANGLE OF YALE COLLEGE.
James Gamble Rogers, Architect.

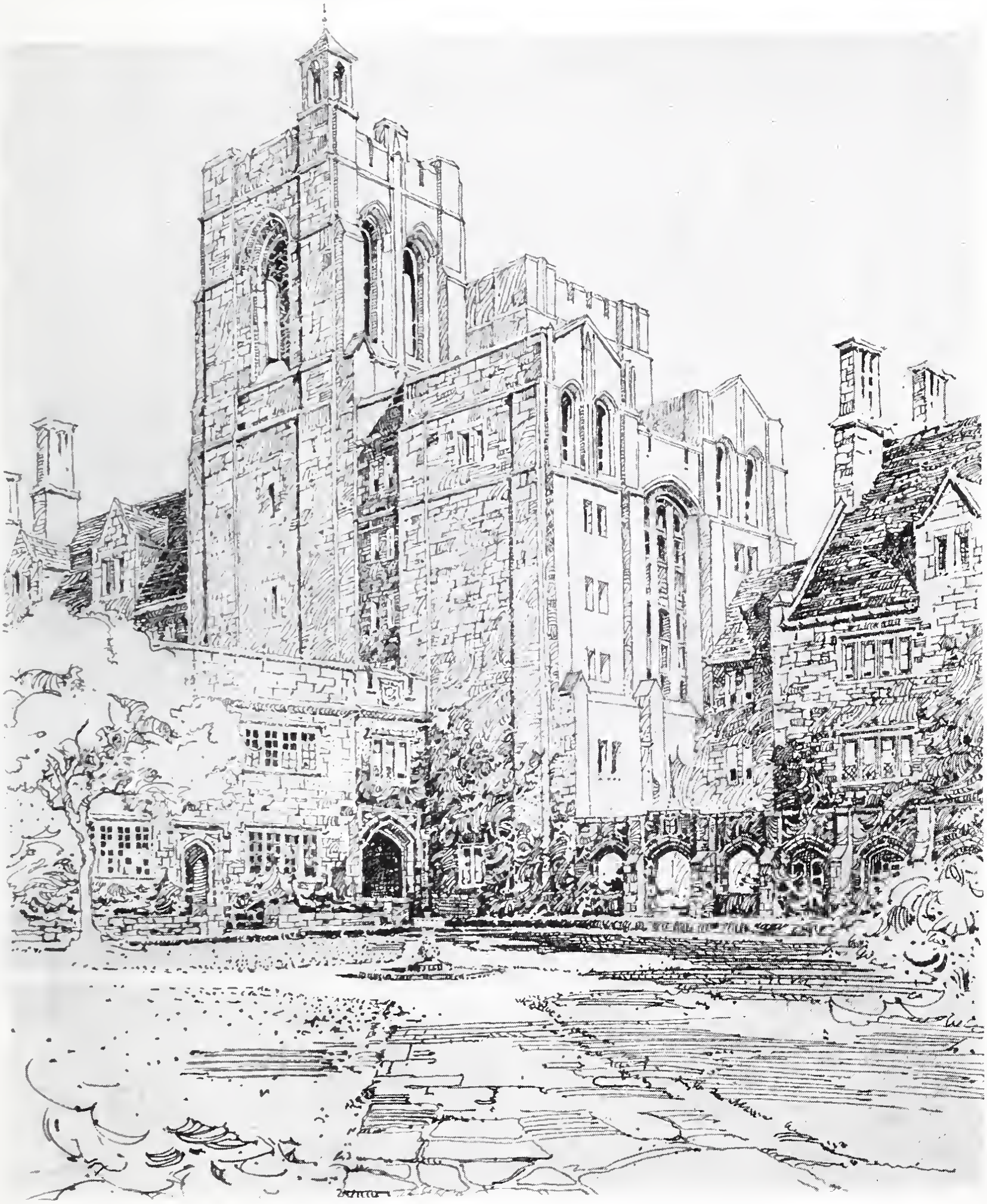
principal gateway should be on the side nearest to the old college campus, at a point opposite the open space between Dwight Hall and the Old Library. This entrance, adjoining the dominant feature —the Harkness Tower—as we have said, opens directly into the largest court, thus affording grateful views in deep perspective of the secondary tower and structures at the opposite end of that court; and similarly attractive vista effects are planned in connection with each of the five other entrances. Surrounding the entire group, save at these gateways, there will be a wall, and between this wall and the buildings, the sunken grass area about four feet in depth, to which reference has already been made.

By dint of continuous study and experimentation, the effort to secure the best architectural results and to perfect the original design in every detail goes forward steadily. Thus, Mr. Rogers says: "In order to get satisfactorily the stone jointing, texture, color and mortar, we have had five different walls built in New York City. When we obtained one that seemed correct, we had a larger one built in New Haven where it could be studied in the same light and under the same conditions as will affect the permanent buildings. All this preliminary study costs money, but it is not extravagant or wasteful, because it will in the end save many times the amount expended;" and it is indeed evident that such careful experimentation naturally leads to the discovery of economical methods in the use of materials, or perhaps more frequently to time-saving, to avoidance of delays eventually, by and through "knowing exactly what to do." Mr. Rogers says that a lesson in the economical employment of mortar has already been learnt. Well, some of the oldest stone edifices we have ever seen in the New World were built entirely without mortar. The importance of details, even minor details, of the stonework is suggested in the statement that the exterior surface alone just about equals a wall higher than the average house and one mile long. As for the kind of interior construction adopted, Mr. Rogers says it "will be masonry walls and reinforced concrete floors and columns, this being considered the best for durability and protection. But the details are studied in such a way as not alone to secure fire protection but to insure the minimum of upkeep. The entry system was adopted without much discussion, and its many advantages for safety and convenience were so apparent that it was considered almost a requirement. The stairs are as nearly fireproof as can be made, being of stone with not even a wood handrail, the handrail being cut into the stone. The stairs are to be built in the old-fashioned way, the step being of a solid piece of stone supported by the masonry wall at each end." There are about 130 single rooms, a number of suites of one study and a single bedroom, and some groups of one study and three bedrooms; in general, however, the arrangement is still as it was in the "Old Brick Row"—two bedrooms with each study. The studies are to be about fourteen feet square, and bedrooms eight by eleven feet. The dimensions of single rooms are varied not only in order to utilize space to the best advantage, but also—and more particularly—to avoid uniformity, to increase the sense of individuality that should inhere in each room.

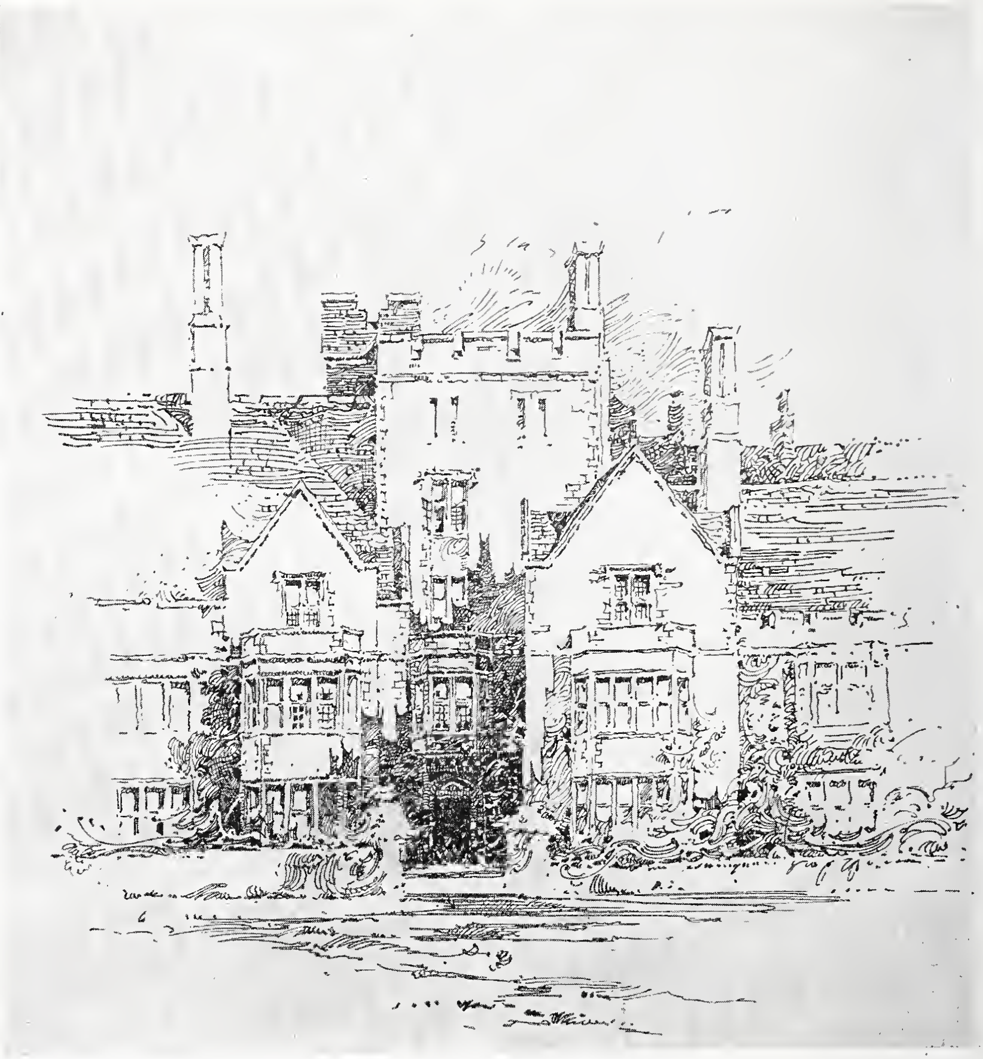


TOWER BUILDING AT NORTHEAST CORNER OF LARGE COURT —THE MEMORIAL QUADRANGLE OF YALE COLLEGE.
James Gamble Rogers, Architect.

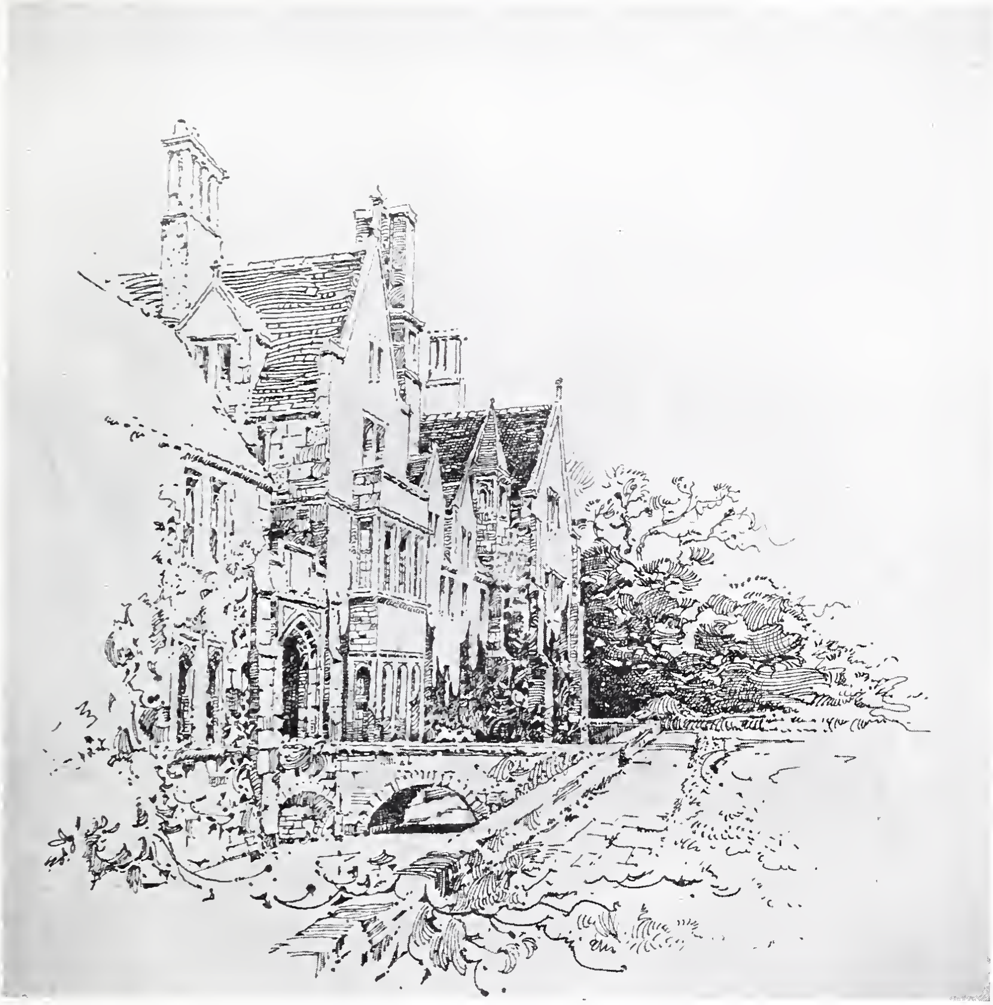
The Harkness Tower is, of course (as our illustration shows), not the outcome of any Oxford suggestion, but a strikingly successful adaptation of the St. Botolph "couronne" tower at Boston, England. The potent charm of affectionate association will always seem—and be—a part of the very fabric and texture of this memorial. And another tower will have associations appealing



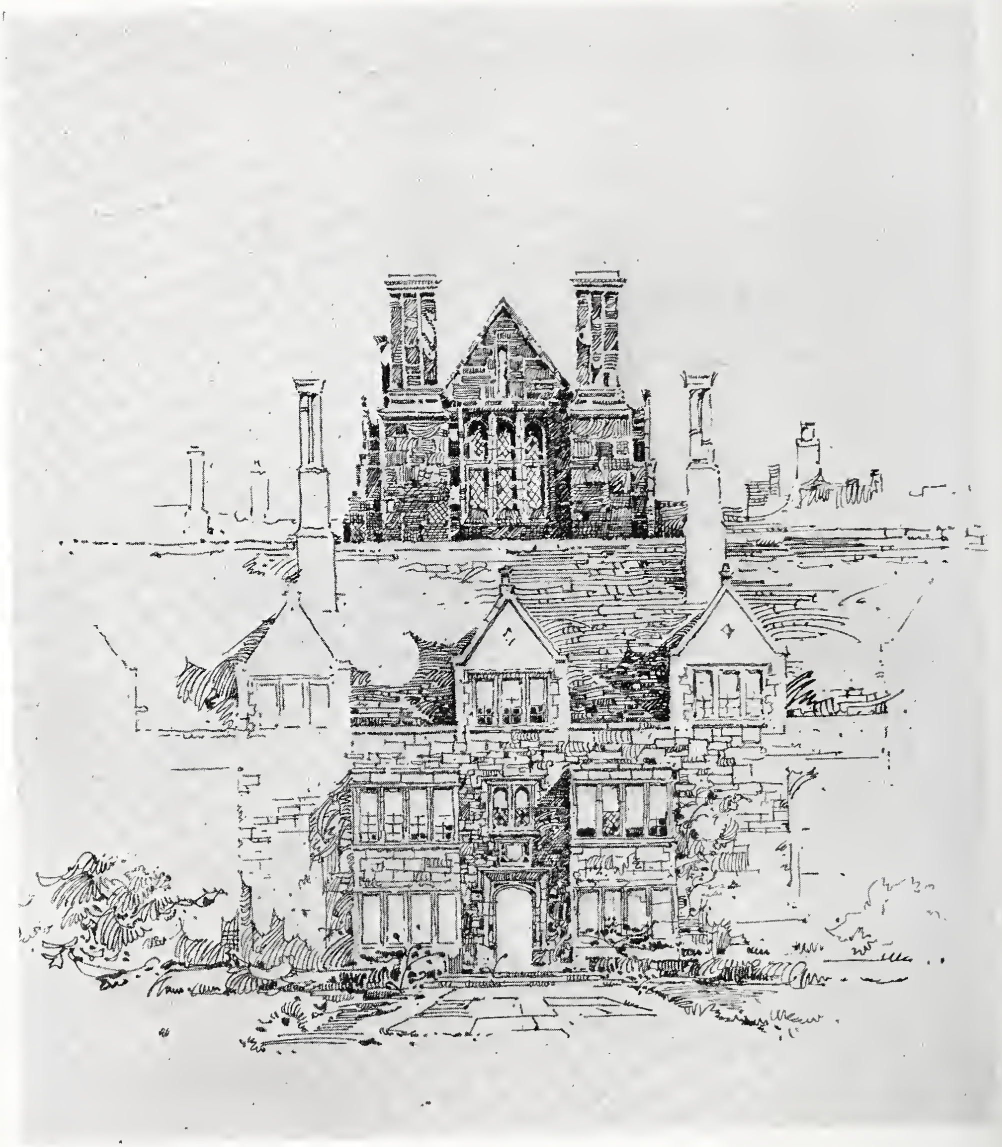
A DORMITORY IN LIBRARY STREET—THE MEMORIAL QUADRANGLE OF YALE COLLEGE. JAMES GAMBLE ROGERS, ARCHITECT.



STAIR ENTRANCE, CENTRE COURT — THE MEMORIAL QUADRANGLE OF YALE COLLEGE. JAMES GAMBLE ROGERS, ARCHITECT.



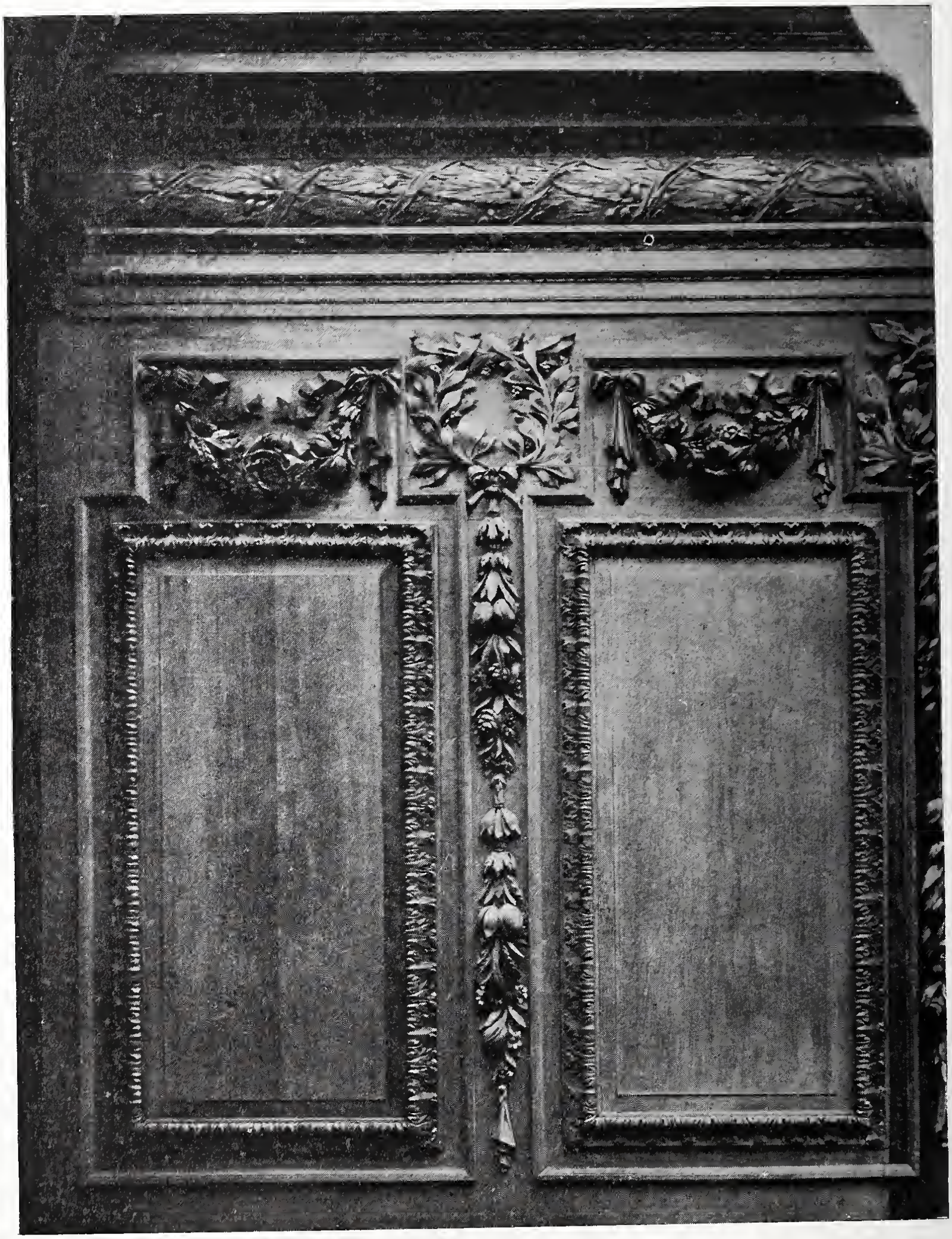
STUDY FOR THE MEMORIAL QUADRANGLE OF YALE COLLEGE.
JAMES GAMBLE ROGERS, ARCHITECT.



CENTRE COURT, LOOKING NORTH—THE MEMORIAL QUADRANGLE OF YALE COLLEGE. JAMES GAMBLE ROGERS, ARCHITECT.

to the sentiment of loyalty. Mr. Rogers tells us of this when speaking about his method of planning architectural operations up to the date of the cornerstone laying, exactly 200 years after the first building on the New Haven Campus was begun. "Instead of asking of the University all the various requirements," he says, "I asked only for the size of the lot and the number of rooms required, and then made the plans. After this I received from time to time requests for different things, all of which I think have been incorporated. . . . Mr. Stokes [Secretary of the University] expressed the wish that we might in some way have a suggestion of Wrexham Church Tower, where Elihu Yale was buried. We readily changed one of the towers to Wrexham, and in return asked him to get one of the stones from Wrexham Tower which would be built into our tower, thus tying the bond just that much closer. This is especially fortunate, for, in many of its details and in much of its spirit, it is like the main tower, the Harkness Tower." By which anecdote we are led, as it were, into the very presence of that spirit "nourished for a time, and times, and half a time" and then cherished faithfully at our great institutions of learning, where it is sometimes known as the *spirit of the place* or *the spiritual side of education.*

Why should that be mentioned, and italicised, in this article? Simply because President Hadley's very interesting remarks (see *Yale Alumni Weekly,* October 12, 1917) when he accepted Mrs. Harkness' gift should be brought to the attention of architects by repeated publication. The very distinguished speaker said: "Of the various means to develop and perpetuate this spiritual side of education, beautiful buildings are one of the most important. Cardinal Newman placed them in the forefront among educational agencies, as more essential to the main purposes of a college than anything else. There are many reasons for thinking that he was right. A monumental building, if it be really beautiful and glorious, gives a visible and permanent object around which life and loyalty can grow and to which tradition and sentiment can attach. The man who looks out day after day into the college quadrangles of Oxford or Cambridge finds a stimulus both to his love of beauty and his love of learning. Such influence is more needed today than ever before. The waste of war is destroying churches and castles and glorious monuments of antiquity. Unless the world builds new centres of beauty and affection to take the place of the old, the twentieth century will, in spite of material progress, be essentially poorer than the nineteenth. And war has done more than lay buildings waste. It has, for the moment at any rate, distorted our standards. It has compelled us to look too much for immediate efficiency rather than permanent utility; to seek tangible effects and disregard intangible ones; to work for achievements of the moment rather than for those of the ages. Doubly important, then, is it to renew our supply of tradition and inspiration by buildings like this; to bring home to the students who shall live within these walls the lessons of affection and loyalty and love of the beautiful which should go into the life of an ancient college."



WREN PERIOD CARVING FROM
WINCHESTER COLLEGE CHAPEL.

English Architectural Decoration

Text and Measured Drawings by Albert E. Bullock

Part IV.

THE transitions connecting the chief changes in architectural expression in past ages were generally heralded by marked literary effort, which has been recognized by many to have a distinct influence upon the style subsequently developed. Decoration naturally followed in the wake of these fresh innovations, the social conditions of the people reflecting, in more or less intense degree, the dignity of Court customs.

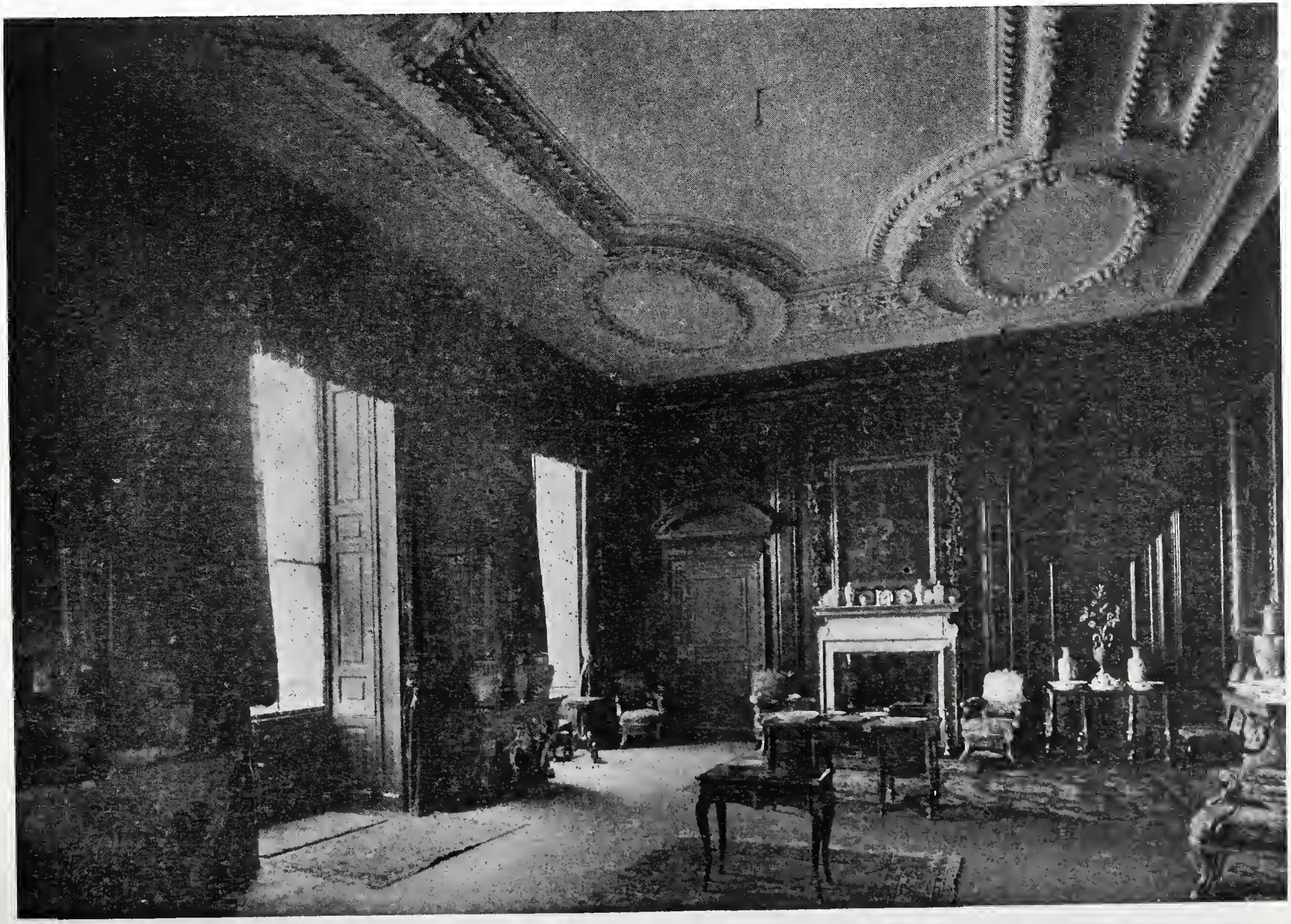
From the time of Charles II to George IV these conceits were nicely balanced and mirrored in the habits of the King's subjects, especially among those whose duties involved intercourse with France.

Social customs governed the planning of buildings, the apartments being subject to the domestic necessities of the age and the degree of importance of an owner's position in life. Thus, in the Georgian period, a small antechamber connecting a bedroom was utilized as a "wig" chamber, where the visitors' wigs were hung in rows upon wooden pegs, and where they were also powdered and dressed. Such a room still exists at Belton and some of the larger mansions of England. In modern times our canons of sanitation have found a use for this room in the bathroom.

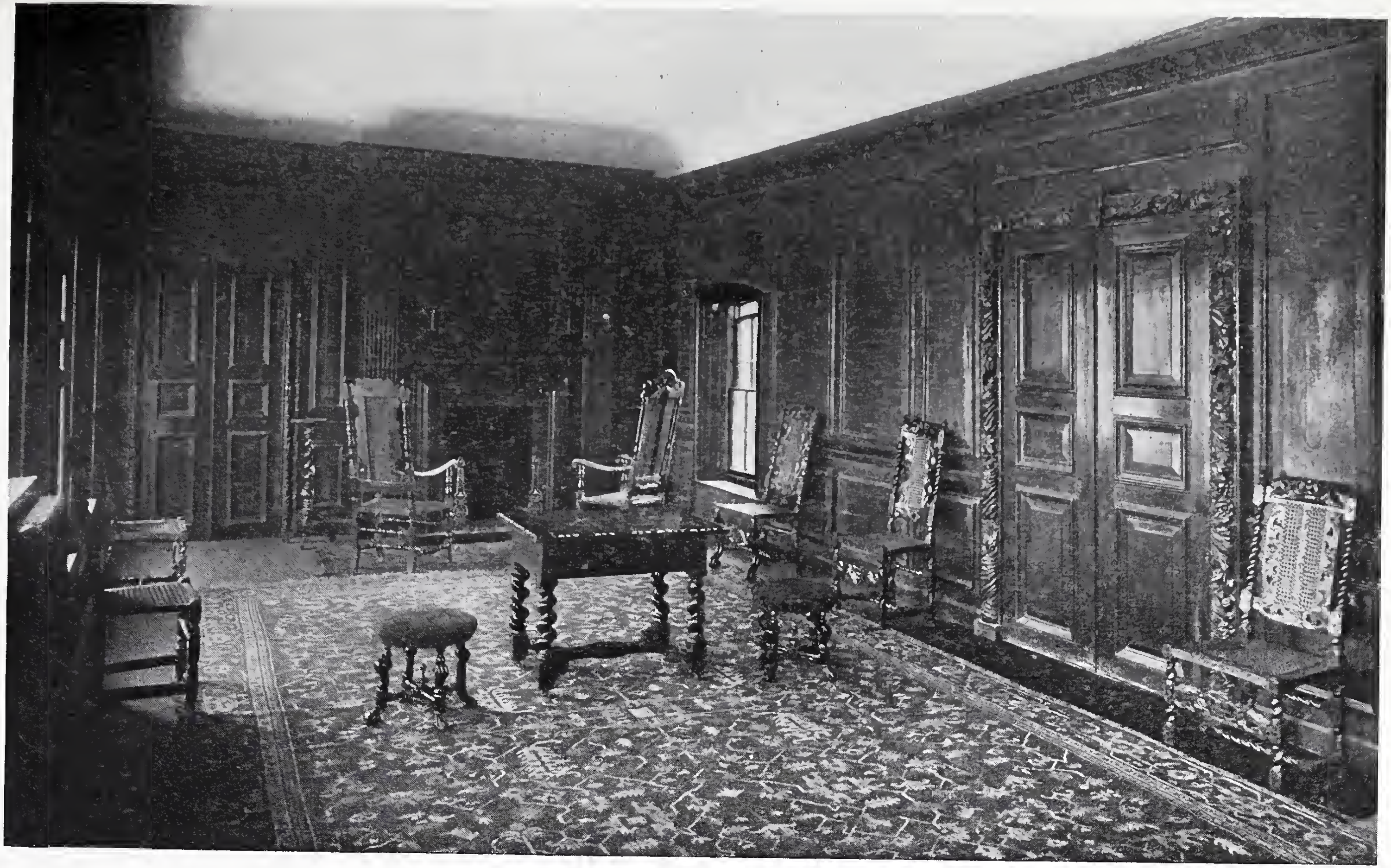
This change in the plan of houses through the various decades is a very interesting study. The E and H shaped house of Elizabethan and early Jacobean times were built with lofty rooms in which there were usually one or two long galleries used for receptions. The character of these is charmingly illustrated in Nash's Mansions, with the additional local color given by the costumes of the people of the age he poetically introduced. Montacute House, Somerset, and Knole, Kent, are typical examples; while there still stands in Essex a smaller brick-built residence of the period, known as Eastbury Manor. This house is of the H type, but the connecting arms of the wings project considerably at the rear, giving opportunity to form a yard or court at the back by means of a wall connecting the gabled ends of the wings. In the internal angles, formed by the wings and body of the building, octagonal towers were built containing circular staircases with solid oak steps joined to a massive central newel post. Early Victorian alterations have hidden the interior arrangement by a multiplicity of rooms, but there is no doubt that it followed the precedent of current examples in having a screen dividing the presence chamber from the entrance.

The plan changed toward the latter end of the reign of Charles I, by having a large central hall with a gallery above giving access to the principal rooms, as at the Queen's House, Greenwich, and The Pynes, Devon. The approach to the residence was frequently by means of a flight of stone steps or a terrace, which obtains also at Wilton, Raynham and other of the larger mansions built by Inigo Jones.

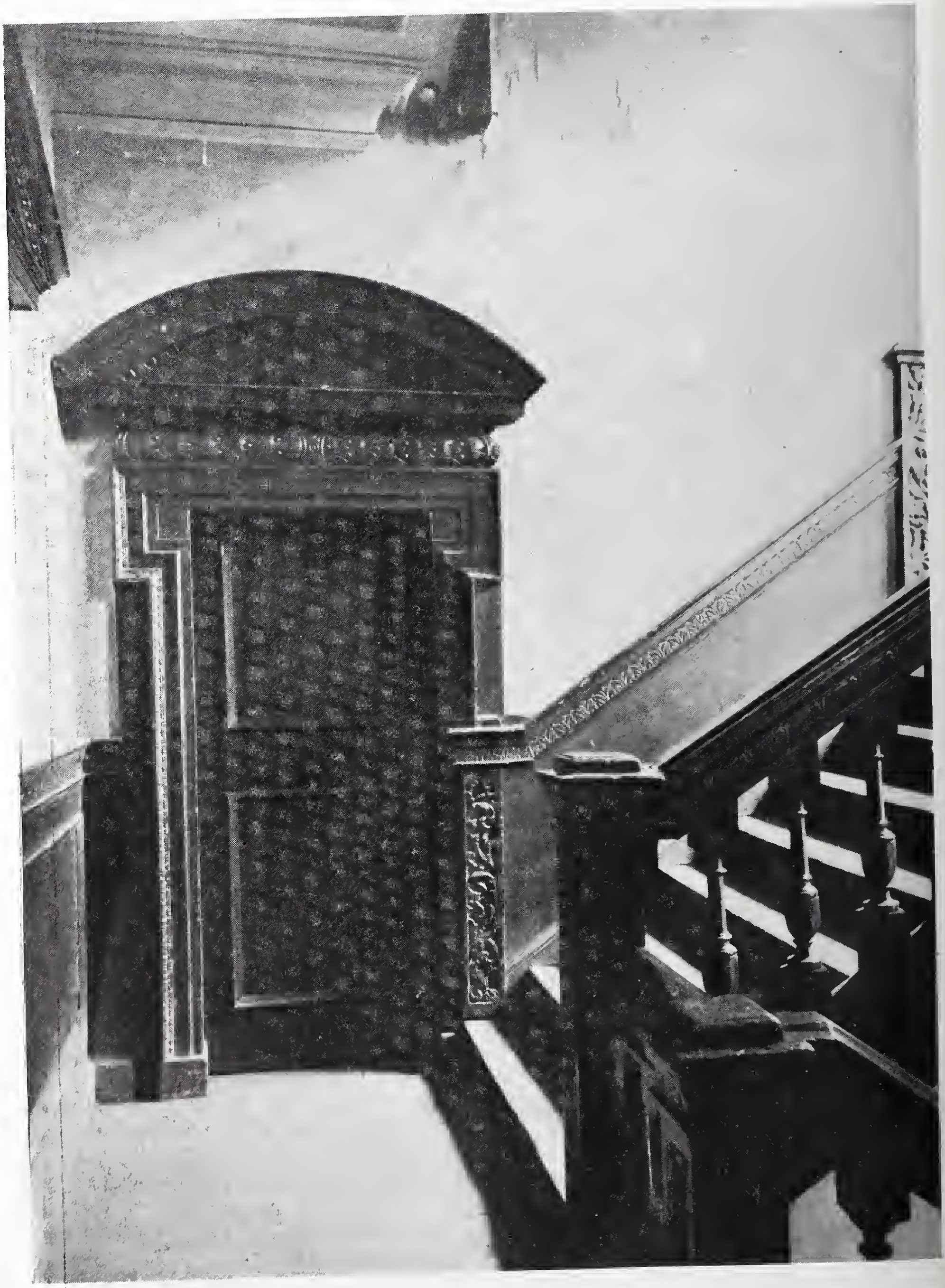
With Sir Christopher Wren and William Talman the French plan was adopted as practiced by Gabriel and others at Versailles, the rooms being arranged around courtyards and communicating together by means of doors placed opposite each other in order to give a vista of the palatial splendor of the place within. This idea is carried out at Hampton Court Palace, Chatsworth and Belton; except that Belton is a rather smaller residence compared with the two former. There existed until recently a small house in Love Lane, in the City of London, of the Wren type, believed to have once been inhabited by that famous architect. The plan was very simple, with a wide entrance hall and staircase beyond, having square paneled newels, heavy balusters and cut string.



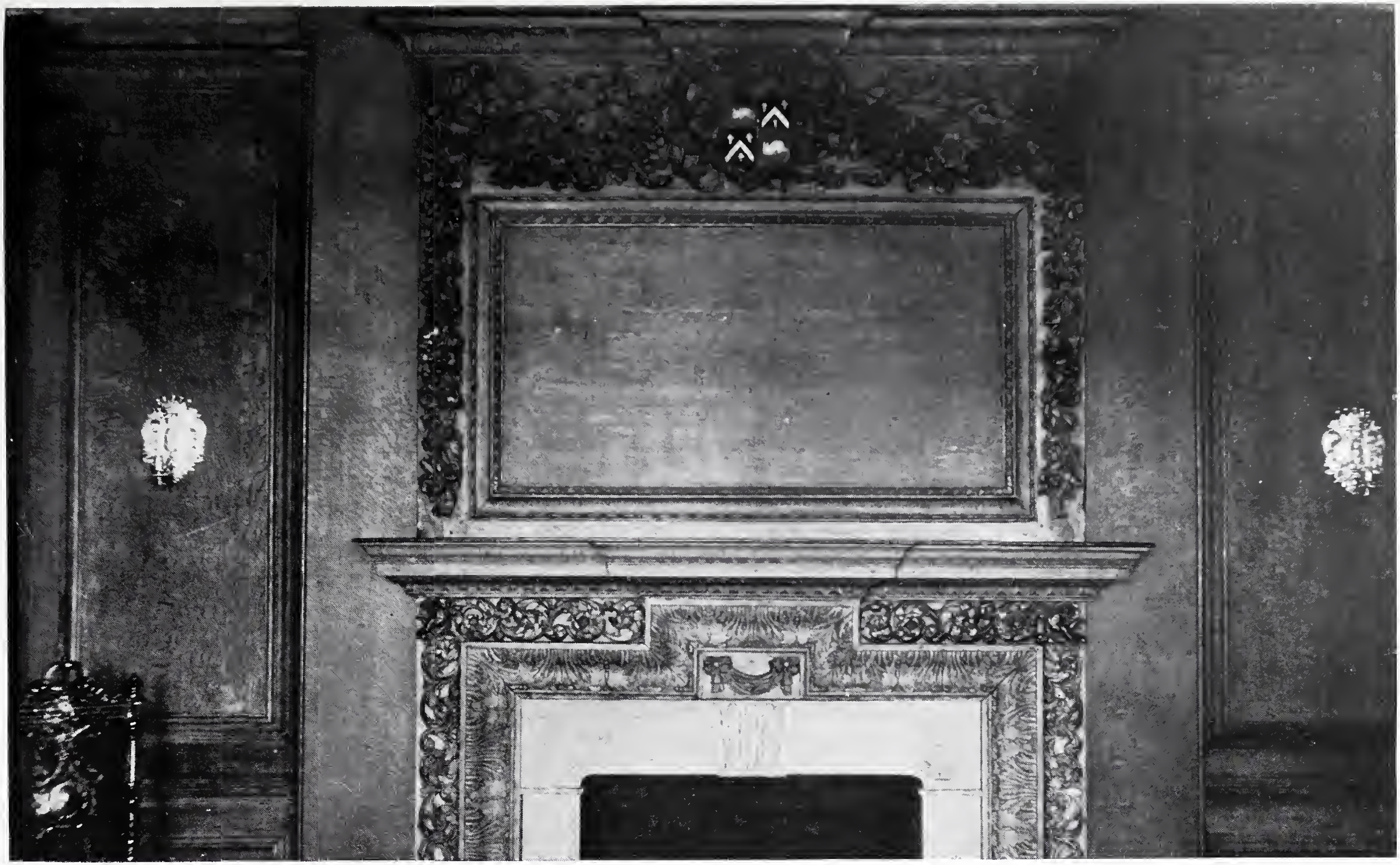
GENERAL VIEW OF DINING ROOM—BELTON HOUSE, NEAR GRANTHAM. ABOUT 1680. WREN.



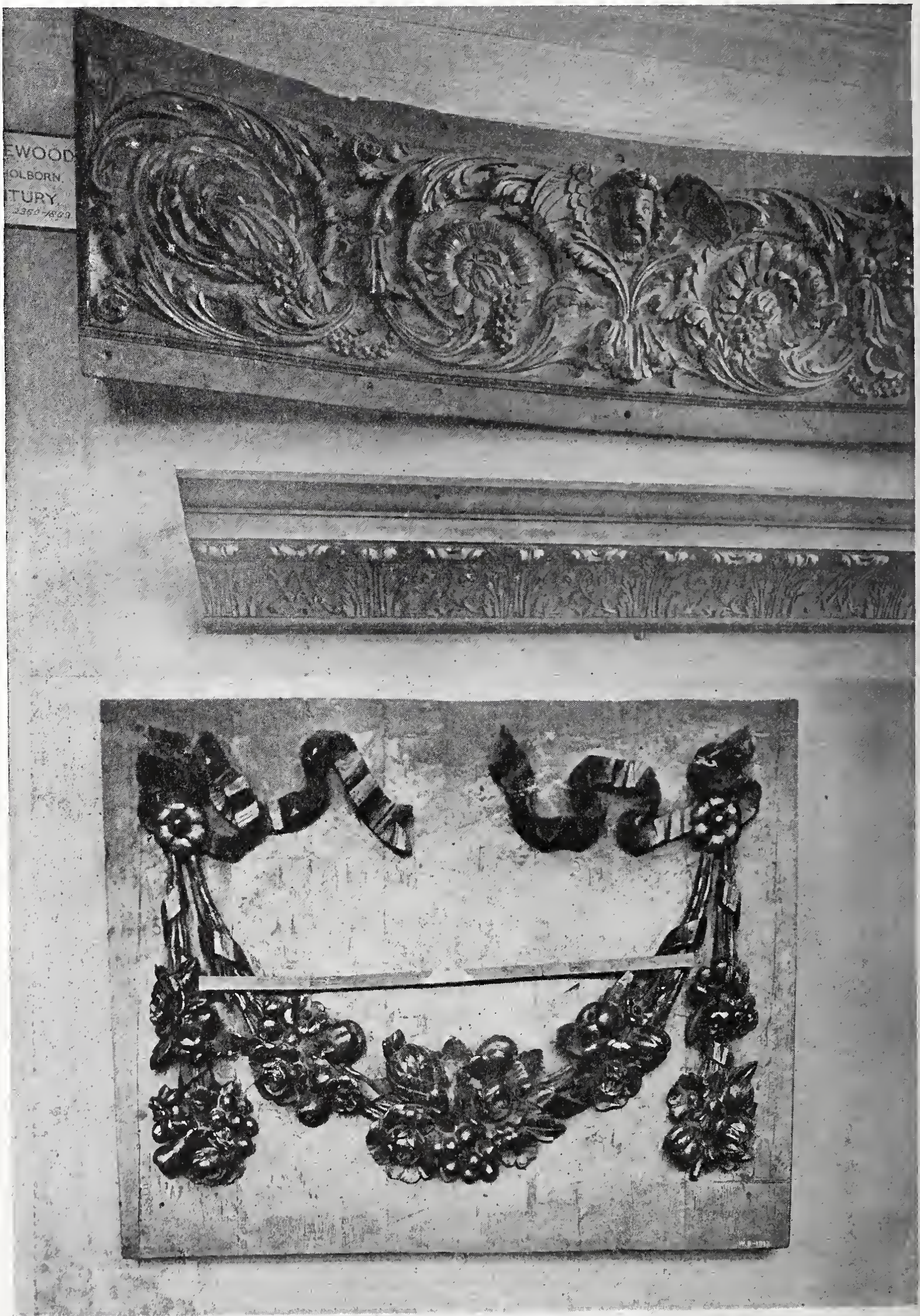
PANELED ROOM FROM A HOUSE IN NORTH WALES, ABOUT 1692. IN POSSESSION OF MR. F. W. PHILLIPS, OF HITCHIN.



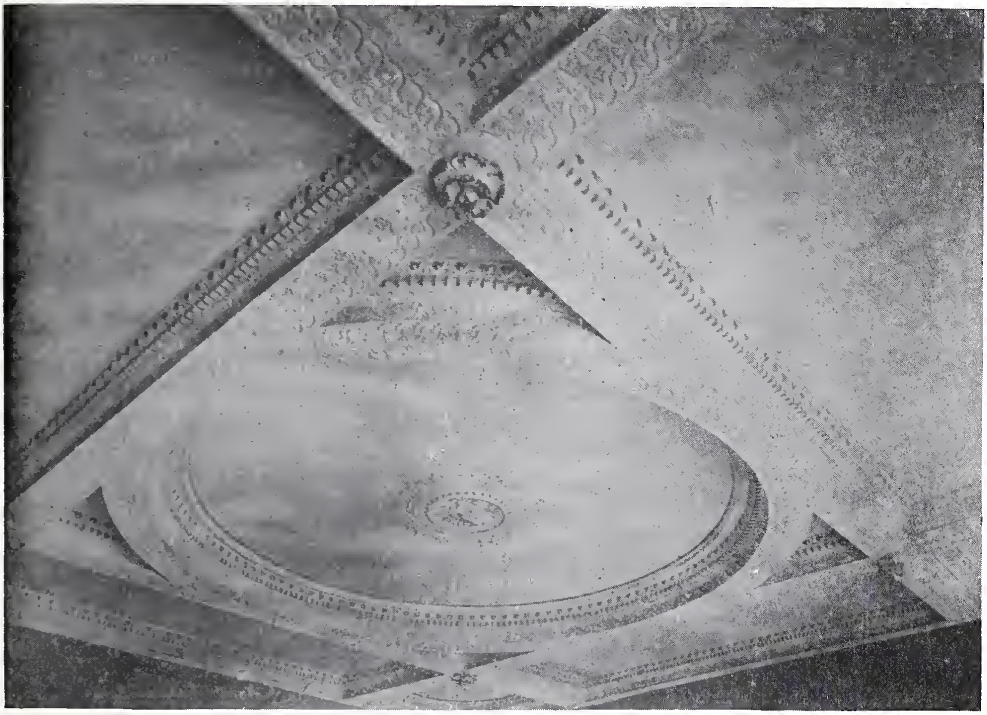
DOORWAY ON STAIRCASE—THE WARD SCHOOL, LOVE LANE, LONDON. WREN PERIOD.



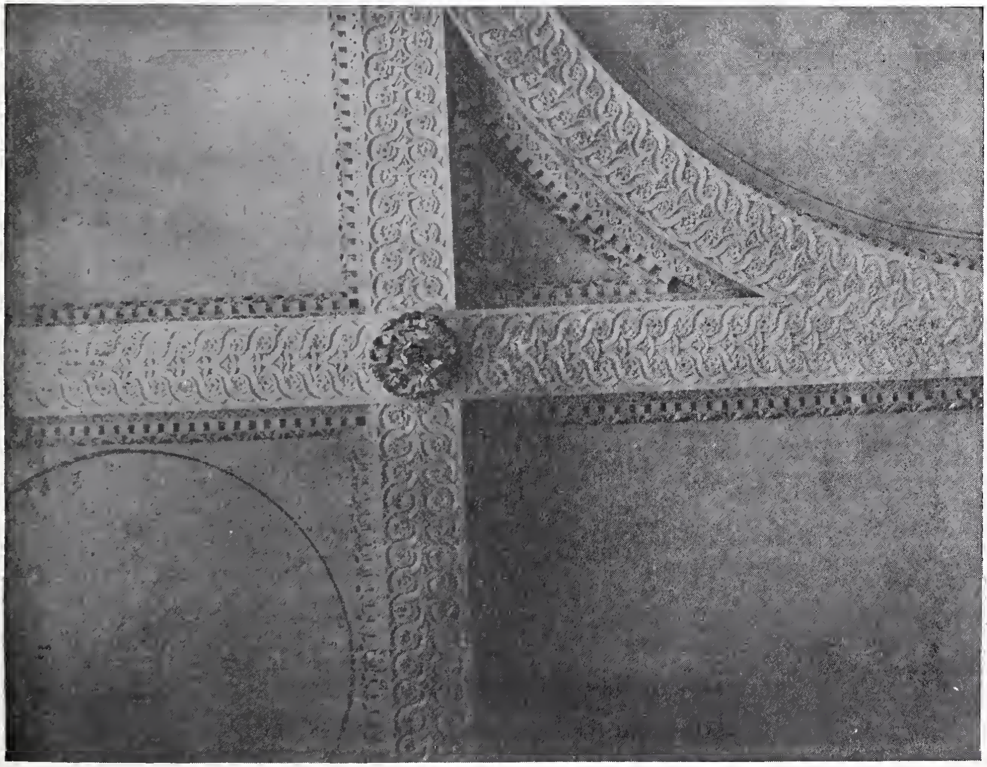
CHIMNEYPIECE IN ROOM FROM
CLIFFORD'S INN, LONDON, 1668.



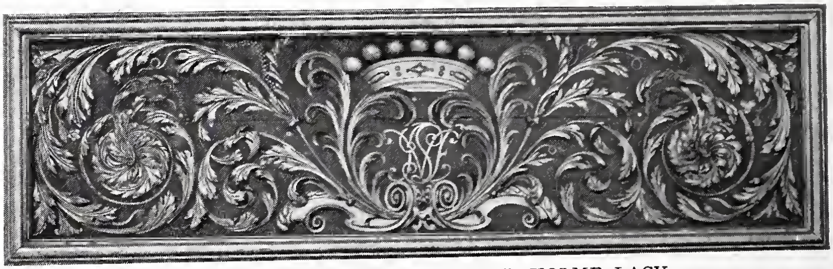
PINEWOOD CARVED SWAG AND DROPS.
IN VICTORIA AND ALBERT MUSEUM.



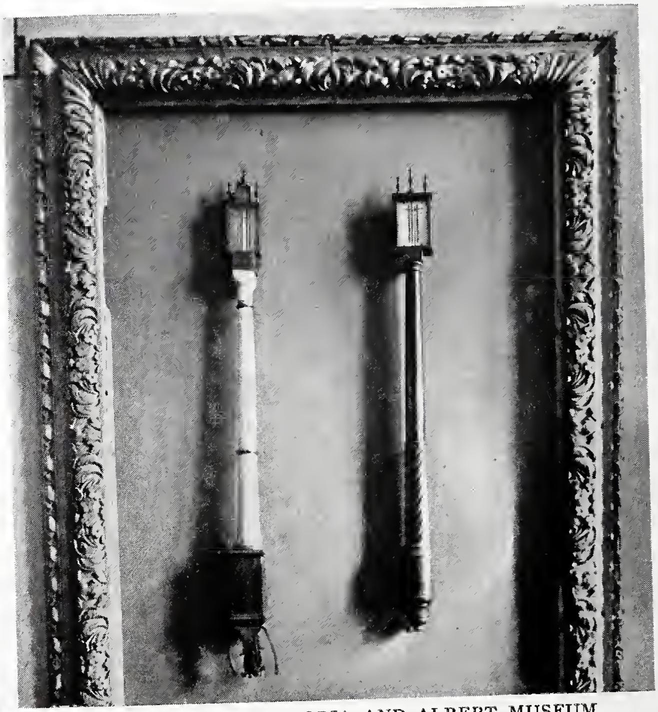
DETAIL OF CEILING—THE QUEEN'S HOUSE, GREENWICH.



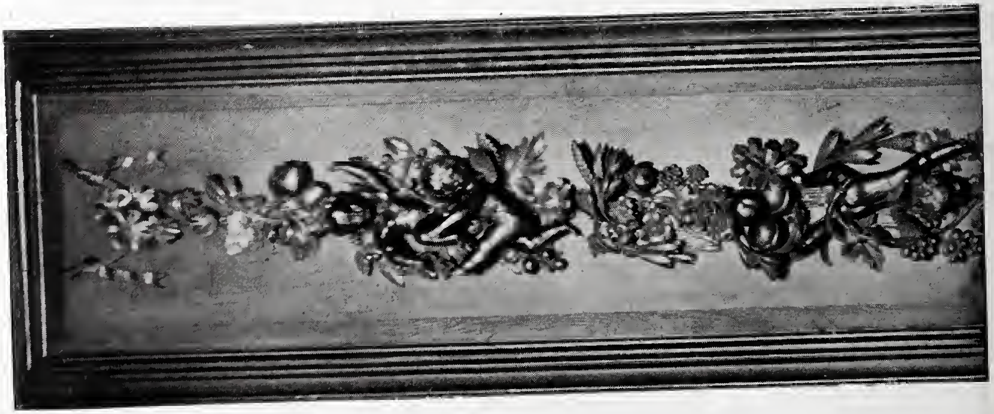
DETAIL OF CEILING—THE QUEEN'S HOUSE, GREENWICH. INIGO JONES, 1637.



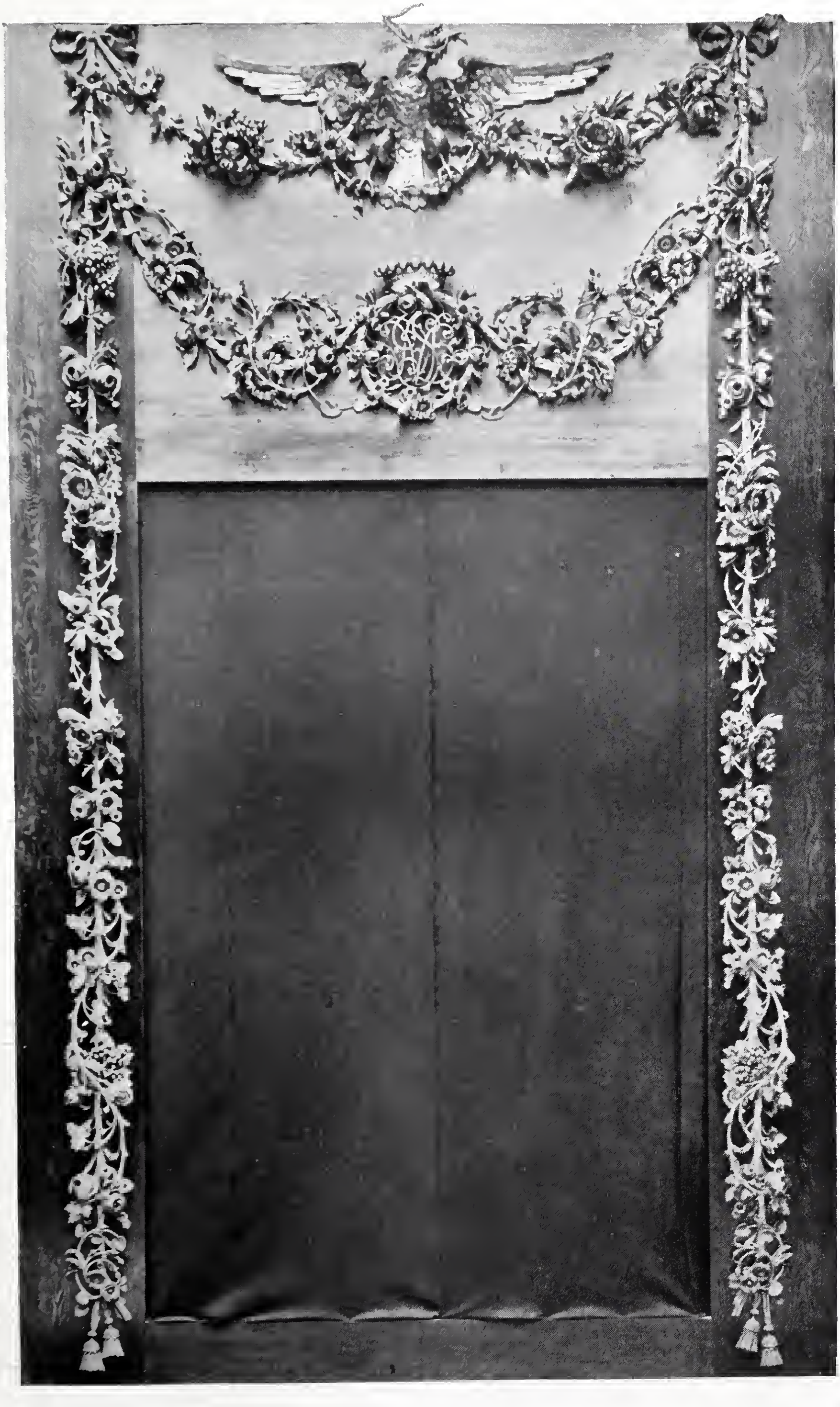
PANEL UNDER CARVED FRAME—HOLME LACY.



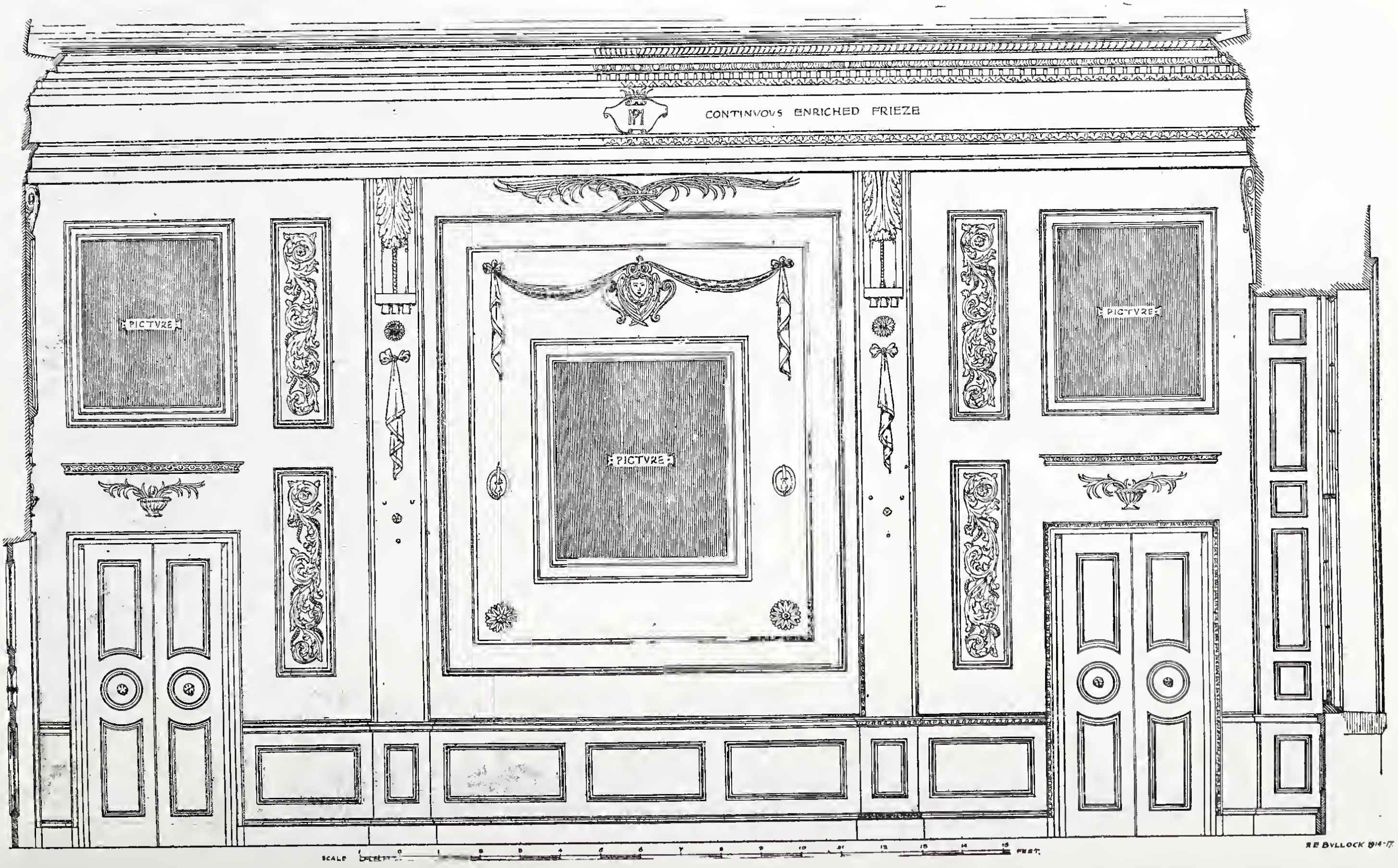
DETAILS FROM VICTORIA AND ALBERT MUSEUM.



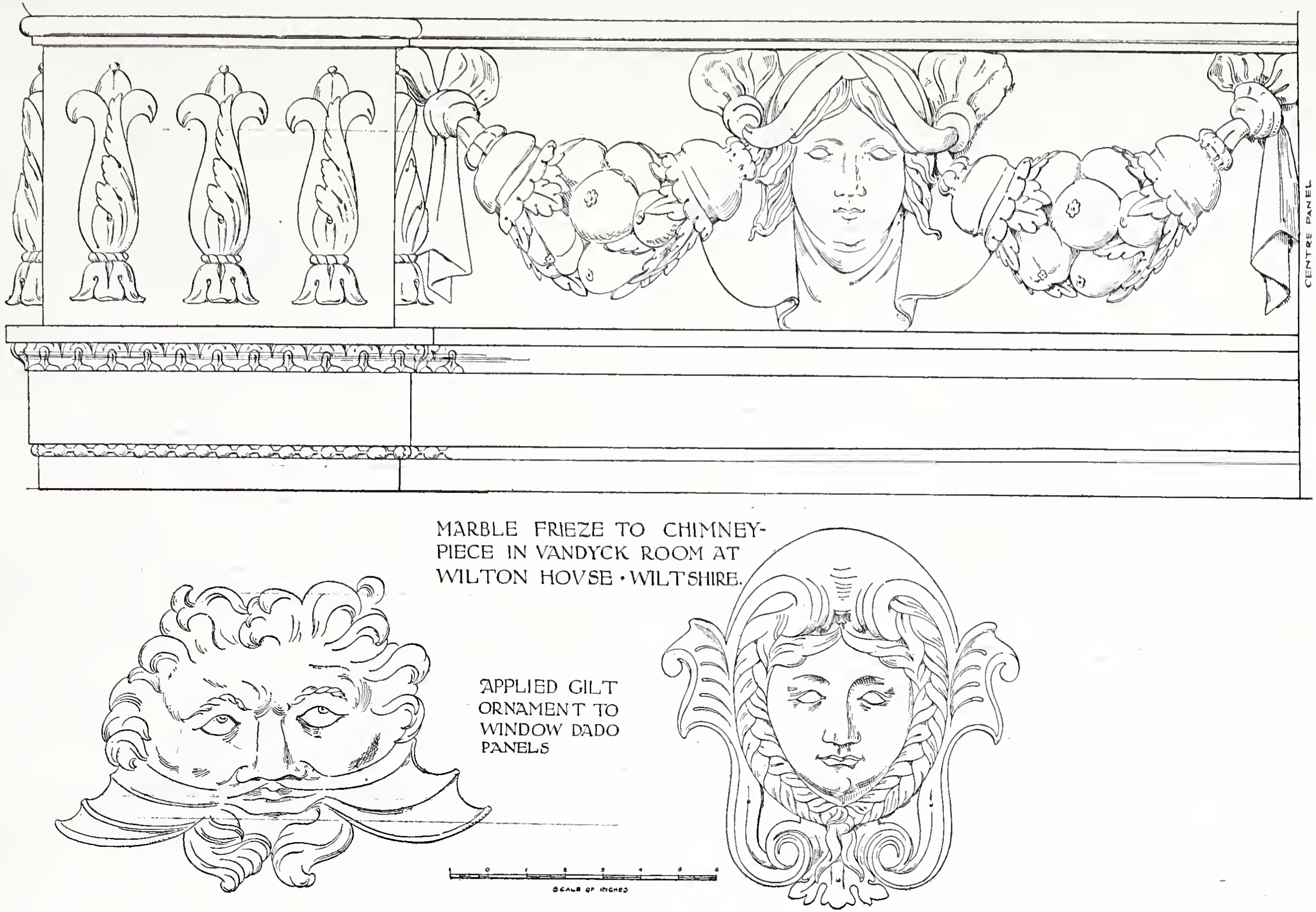
WALL SWAG FROM BELTON, NEAR GRANTHAM.



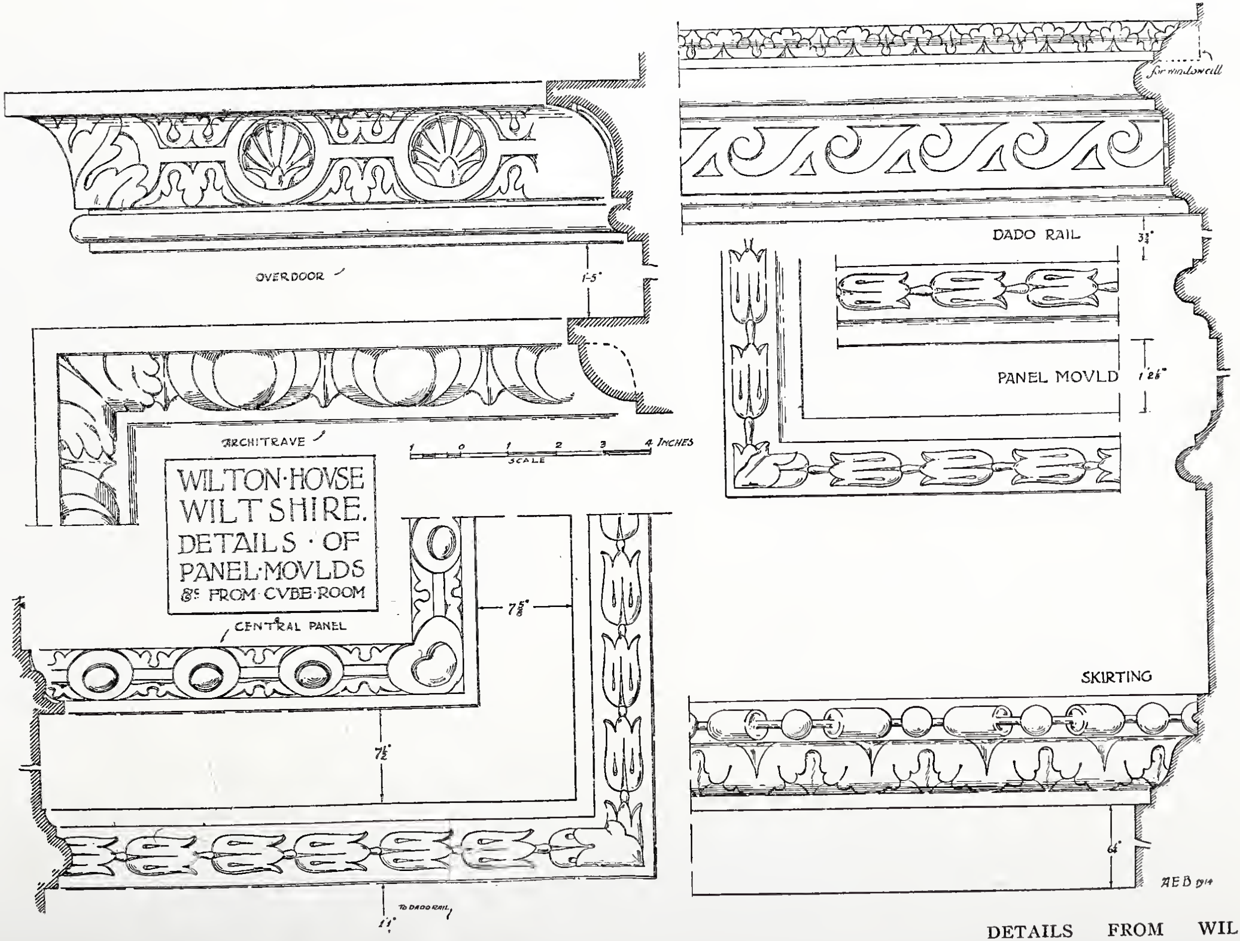
CARVED FRAME FOR PICTURE PANEL, WREN PERIOD—HOLME LACY, HEREFORD.


CONTINVOVS ENRICHED FRIEZE
PICTVRE
PICTVRE
PICTVRE
SCALE
1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 FEET.
R E BVLLOCK 1914-17

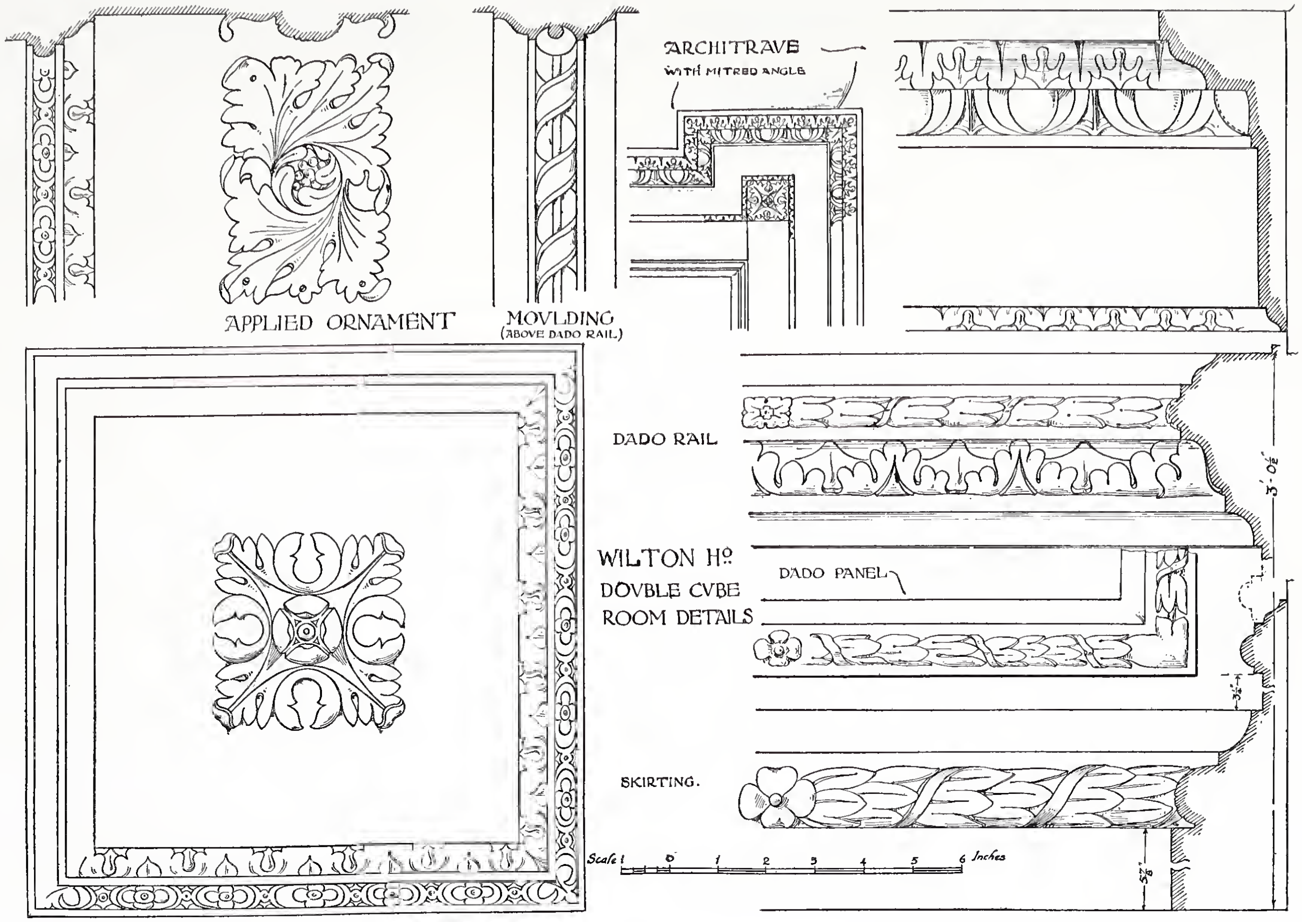
SIDE OF STATE ROOM —
WILTON HOUSE, WILTSHIRE.


CENTRE PANEL
MARBLE FRIEZE TO CHIMNEY-PIECE IN VANDYCK ROOM AT WILTON HOVSE · WILTSHIRE.
APPLIED GILT ORNAMENT TO WINDOW DADO PANELS
1 0 1 2 3 4 5 6
SCALE OF INCHES

DETAILS FROM WILTON HOUSE, WILTSHIRE.



DETAILS FROM WILTON HOUSE, WILTSHIRE.



DETAILS FROM WILTON HOUSE, WILTSHIRE.

The doorways had pedimented architraves; while a square room on the ground floor was paneled in oak, having for ceiling a large enriched circle joined by smaller wreaths within the cornice molding. This room has now been removed to the new Ward School of Sir John Cass's foundation in the City.

Another room of interest of this time is the Board Room of the New River Company in Rosebery Avenue. This is a very fine room, now being incorporated in the new buildings, and consists of a lofty oblong oak-paneled chamber, with windows at one end, having a beautifully curved chimneypiece by Grinling Gibbons, with his familiar galaxy of ornament, finely carved, modeled and interlaced in the perfection of his genius. What enhances this room so well is the enriched and colored ceiling, having a large oval painting in its centre with a surround of modeled plaster of a design with fruit, flowers and birds picked out in appropriate colors. In addition there are numerous subsidiary panels modeled with subjects to represent scenes along the New River, from which travels the refreshing water that supplies the populace of London. The whole theme is at once so complete, ingenious and perfectly executed that I venture to think it forms the greatest masterpiece of the age extant.

Following Wren were Lord Burlington and his school, including William Kent, Colin Campbell, James Payne and others, who for the most part adopted the principle of the greater lights of the previous ages—viz., the works of Inigo Jones and Wren in details—but in planning strove after a combination of classic ideals with Italian villa effect. Viewed at the present perspective their efforts were not successful; they were mere copyists and adapters with little genius, with one exception in the person of James Gibbs, who justified his existence to a greater degree. He possessed genius both in planning and design; while his decoration; if a little florid, is of much interest and particularly well executed. He was the last true representative of the Georgian era of architecture.

A decided change is noticeable with the introduction of the Classics as practiced by Sir William Chambers; of which Somerset House is still the cream of Thames riverside edifices; while his decorations in Pembroke House, Whitehall Gardens, are distinctly above the average productions of any of his contemporaries. In decoration Chambers developed a style that was based as regards its motif upon a combination of Chippendale with Louis XV, which harmonized admirably with the severer classical details of other relative parts of his designs.

He was followed by Sir John Soane in the same school, who also became lecturer to the Royal Academy of Arts. Although a deep and learned student, the works of this architect did not appeal to all. The Bank of England is his principal achievement extant, including some minor works in various parts of the country and many churches.

His planning, like that of Chambers, was utilitarian, and both endeavored to evolve unique outlines of geometric form within which to clothe the accommodation required by some of their clients.

In temper Soane was a passionate man; he married an heiress, and during his lifetime acquired many valuable works of art, including an extensive architectural library, which embraces many volumes of original designs by the brothers Adam, among other valuable manuscripts. By act of Parliament he bequeathed his house, library and museum in Lincoln's Inn Fields to the nation; and the same is a very valuable asset to the art students of London.

The brothers Adam, by the employment of Italian artists, invented a new and original form of light decoration which is not a little adapted from a combined development of Louis XVI and French Empire styles. Incidentally, it is known by many as "English Empire."

Following upon the researches of Winckelmann at Herculaneum, the brothers Adam carefully studied the sculptures at Spalato and very cleverly adapted many of the features to their new style of decoration, which developed with their increased and popular practice.

Sion House, Isleworth, with its famous stone screen, is one of the most complete examples of their work; while most of the notable houses existing at the time boast at least one or two rooms decorated in their peculiar manner. Belton has a library with depressed barrel vaulted ceiling of this cult, and even Ford Abbey contains a small reception room with a light decoration of the period.

Furniture was designed of lighter character to be in keeping with the style, and Sheraton, Hepplewhite and other joiners vied with each other in their productions. Locks, metalware, candelabra, etc., all followed suit, until a complete estrangement from anything previously known was developed.

The materials employed were equally ingenious, many enrichments being executed with carton pierre on deal or with pewter. Iron grilles to over-door openings to the entrances of houses formed a valuable point of advantage upon which to centre their energies, and color schemes of black and gold were not infrequent.

Their popularity not unnaturally made their competitors envious, and competition became very keen after awhile, to the undoing of the style and vulgarizing of its many features.

An attempt will be made to illustrate the styles previously narrated in future articles, the work of Inigo Jones at Wilton forming the present subject.

The scheme of these rooms is largely cream and gold, with white marble chimneypieces.

The state rooms at Wilton are very handsome and extend the whole garden front. The central room, known as the "Vandyck" room, forms in dimensions a double cube, being sixty feet by thirty, by thirty feet to the large coved ceiling, while the adjoining room is thirty feet square and thirty feet high.

The enriched moldings are very small in proportion to the areas covered, and it will be noticed that provision is made for the systematic hanging of pictures by providing special spaces and panels for them, which feature was adopted in most of the subsequent styles, but was totally ignored during the previous Jacobean and Elizabethan eras.

[Part III of Mr. Bullock's series was published in April, 1917. Owing to increasing irregularity in the transatlantic mail service, Part IV was not received in time for the May issue. The break in publication having occurred, it was thought advisable not to resume the series until all the remaining papers had reached us. These will now appear without interruption during the rest of the year.

Readers who have followed the valuable series will be interested to learn that some of the old woodwork described by Mr. Bullock is preserved in the Victoria and Albert Museum, and has been very fully illustrated in the Museum's publications. This is the case with the paneled room from the old Palace of Bromley-by-Bow and with that from Clifford's Inn. Each of these rooms is the subject of a monograph published by the Museum at the nominal price of sixpence. Two other monographs deal with a room from Sizergh Castle, Westmoreland, and with the boudoir of Madame de Sérilly from the Rue Vieille-du-Temple, Paris. Additional monographs on exhibits in the department of woodwork of the Museum will be published after the war.—Ed]

The SMALL COUNTRY SCHOOL HOUSE

By CREIGHTON BARKER, M.D.
Bureau of Municipal Research, New York City

WE point with especial pride to our educational system, but we have been slow in improving our rural schoolhouses, most of which are poorly heated, improperly lighted and unventilated. More than one-half—about 12,000,000, or three-fifths—of the school children in the United States are attending schools in towns of less than 2,500 inhabitants. One-half of this number, or 6,000,000 children, receive their first and frequently their only education in the one and two room schools scattered over the countryside. It is scarcely possible to imagine a more unfortunate environment for the formative mind of the school child than that presented by the traditional country school. However, it may be said to the credit of the rural communities that many of them are eager to better existing conditions.

In many communities the school buildings not only house under compulsion twenty per cent. of the total population for eight hundred hours each year, but they also serve as chapels and general meeting places for the people in social and quasi-political gatherings. This community-centre function has only been partially developed, but it is actually a service that the schoolhouse should render and that is quite as important as housing the classes in the three R's. In the past, home and school were total strangers. The reasons for the estrangement between these two principal centres of education are to be found, on the one hand, in a misconception as to the school's object and, on the other, in social conditions.

The school, it was held, had no other duty toward the community than to supply the children with book knowledge. That a sound and natural development of community spirit and social betterment should go together with the intellectual development of the children, and form a natural foundation for all education, the school never considered. To fulfill its purpose completely the school must extend its influence beyond its walls into the homes of the community and into business and social intercourse.

There is at present a very commendable tendency in certain localities to consolidate a group of adjacent district schools under one roof and to transport the children from their homes to the school in omnibuses or automobiles. Such a plan not only insures improved accommodations for the school children, but also effects economies in teachers' salaries, heating and repairs. Various schemes have been followed out in making this consolidation. If it be a group of schools within the same township, the so-called union school has been constructed; and the various districts pay per capita rate for the children attending the school. If, however, the children are drawn from two or three townships, frequently the towns will cooperate in constructing the building and then pay the educational costs proportionately, or one town may erect a building independently and per capita costs are paid by the other towns. When such a building is contemplated a more pretentious and completely equipped plant is possible than was ever afforded by the familiar one-room rural schoolhouse.

It is scarcely possible to outline a definite plan for such a building, since many variations must be considered in each locality, such as site, structural materials and capacity. There are, however, certain fundamental standards which must be taken into consideration, and should be adopted everywhere without variance.

LIGHTING.

The subject of illumination is highly technical, and the practical application of the principles involved, in so far as daylight illumination is concerned, is not easy, due to the absence of working standards. Recently, however, certain requirements for the daylight illumination of classrooms have been deduced. The object of these requirements is:

1. To insure a maximum of light from the right direction.
2. To insure a maximum diffusion with avoidance of objectionable glare.
3. To make suitable provision for regulation of the light by increasing or diminishing the amount admitted, as necessity may demand.

In order that sufficient light may enter the classroom properly to illuminate all desks, certain standards have been adopted.

The most widely accepted standard is the one which requires the glass area of classroom windows to be not less than one-fifth of the floor space of the classroom. This standard, however, does not cover all the factors which should be taken into consideration. In order to have each desk properly illuminated, it has been suggested that the child sitting at the desk should be able to see a part of the sky vault from the seat, and that this visible sky surface be measured by a reduced solid angle of not less than 50 square degrees. This presupposes that the angle of incidence of luminous rays—that is, an angle formed by a plane from the upper surface of the desk cutting the upper edge of the window and another plane from the same point cutting the lower edge of the visible sky surface—should not be less than five degrees, which is best effected by extending the windows as nearly as possible to the ceiling. This and other arbitrary standards of illumination demand wide modification, because they take into consideration direct light only without reference to the factor of reflected light from any source.

The most rational illumination standard is the actual measurement of light by the illuminometer at each desk. The illuminometer reading at each desk should not be less than ten foot-candles under all conditions.

Not only is an abundance of light necessary, but it must be admitted from the proper direction if the maximum effect is to be secured with the least discomfort to the eye. Unilateral window arrangement to the left of the pupils is generally adopted in this country. Frequently the shadow of a very stout child seated between the window and the desk occupied by a child who is much smaller reduces the illumination of the latter's desk. In addition to this objection, whenever unilateral illumination is practiced the desks immediately adjacent to the windows frequently receive illumination of too great intensity, which is hard to regulate without throwing a part of the classroom in shadow. Two-sided classroom illumination, with windows on the left and in rear of the pupils, is to be preferred. The only reasonable objection to this arrangement is the annoying effect on the teacher, who is seated facing the rear windows. There is no valid reason for this location of the teacher's desk, and the disadvantage is readily obviated by placing the teacher's desk diagonally across the left hand front corner of the classroom.

The illumination of the classroom is frequently defective, because measures have not been taken to secure a maximum diffusion of light. The diffusion of light depends upon the fact that all materials affect light and under varying conditions scatter it to a greater or lesser degree.

Glare is observed when light rays are nearly parallel to the eye level. Therefore, light sources situated above this level are more likely to be free from glare. For this reason the lower edge of the classroom windows should be well above the visual level of the seated pupils.

Certain polished surfaces, largely through their color, reflect a dangerous glare. For this reason the side walls of the schoolroom should have a mat surface free from gloss. In the case of the ceilings, however, no such objections exist, because the light reflected from them is at the greatest possible angle to the visual level and is not likely to produce a glare. Classroom walls should be colored in a manner to obtain reflection with a maximum of diffusion—shades of the primary colors, yellow and green, are to be selected, because they not only have a high reflection coefficient, but also absorb other rays, not concerned in illumination, which may be injurious to the sight.

The regulation of intensity of light should receive careful attention. The most effective means for such regulation is the use of translucent window shades backed by an opaque shade to shut out direct sunlight. The shade fixtures would be of a type to permit the adjustment of the shades from either the top or the bottom of the window.

HEATING.

Under the conditions ordinarily encountered in rural schoolhouse construction the problems of heating and ventilation are so closely allied that they must be considered together. This is due to the necessity of warming the fresh air introduced into the classrooms in cold weather to replace that removed in the course of ventilation. Under ordinary circumstances a stove is the only heating apparatus available for the rural schoolhouse, and from an economic standpoint this is the most effective method for warming a schoolroom, since the modern base-burner stove utilizes seventy or eighty per cent. of the fuel value of coal. There are many defects in the heating with a closed stove, and an attempt to overcome these defects has been made in adapting the jacketed stove. In such a heating apparatus the stove is surrounded by a sheet-iron jacket with a fresh air intake at the bottom which penetrates the wall of the building. Connected with the stovepipe is a perpendicular foul air outlet with an opening at the base, through which the foul air from the lower part of the room is carried out. This outfit serves both as a heating and ventilating apparatus and should provide sufficient change of air.

The measure of sufficient change of air is somewhat indefinite, but an arbitrary standard has been accepted which requires fresh air to be supplied in volume sufficient to keep the amount of carbon dioxide down to not more than six parts in ten thousand. Various States have different requirements in regard to the amount of air each pupil should receive per minute. These average about thirty cubic feet per minute or 1,800 cubic feet per hour. The number of air changes necessary to supply this amount depends upon the cubic capacity of the classroom and the number of pupils. The cubic space allowed each child should be large enough to demand not more than six changes of air per hour in order to avoid drafts, and it may be stated that 225 cubic feet of space and twenty square feet of floor space should be allotted to each child.

BLACKBOARDS.

Blackboards are an essential for classroom instruction and careful attention should be given to their construction, with consideration as to their distance from the floor level and their location in relation to the windows.

The use of wood can no longer be tolerated as blackboard material. The surface of such boards soon acquires a polish which causes a glare that interferes with vision. Composition blackboards are now on the market, which give good service for a short time. Most of these, however, have no great lasting qualities and soon acquire a roughened surface which interferes with writing and vision. In the end the cheapest blackboard material is slate. To meet the requirements of an ideal blackboard, however, slate must present a black surface and not the usual gray of the cheaper slate. It has been stated that a classroom cannot have too much blackboard space. This statement demands qualification, because it was evidently made without due regard to classroom illumination. Where the demands for large blackboard surfaces are imperative, blackboards may be provided with curtains of light color, by which they may be covered when not in use and thereby obviate the absorption of light by the dark surface.

The location of blackboards is of the utmost importance. They should never be placed between windows nor in obscure parts of the classroom. The best location for blackboards is on the front wall. This space may be supplemented by utilizing the right hand wall if left sided illumination is adopted. In both of these locations the blackboards receive good light and are visible without discomfort to the entire class.

The pupils may be protected to a large extent from chalk dust by the installation of shallow troughs from three to four inches wide, which are placed at the bottom of the blackboards and covered by detachable wire screen of coarse mesh. This arrangement protects the fingers, crayons and erasers from the accumulation of powdered chalk. Dust from this source is irritating to the respiratory mucous membrane. The troughs should receive daily attention and be emptied after school hours.

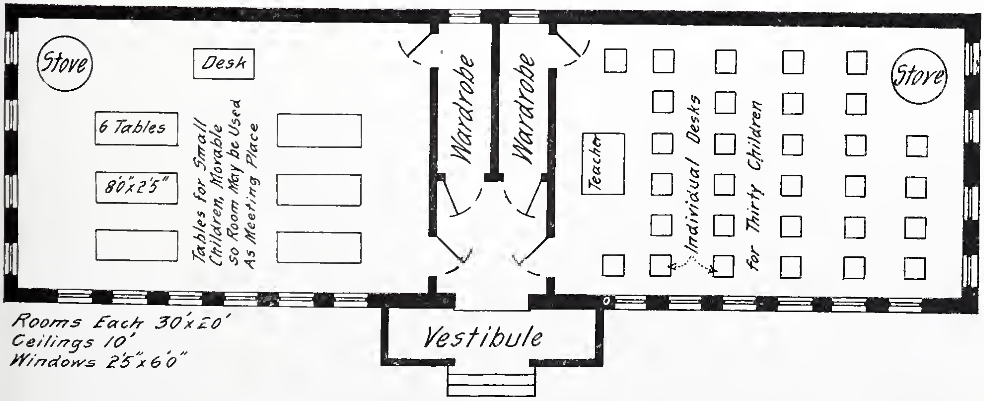
COATROOMS.

No single feature of rural schoolhouse construction has been so consistently neglected as the proper accommodations for the care of wraps and other articles of extra clothing of the school children. The coatrooms in the country schools should provide ample space for drying wraps.

The most suitable location for a coatroom is open to much argument. Just why the coatroom should open into the classroom, as has been advocated by some, is not apparent, and furthermore there is but little to commend the practice of ventilating the classroom through the coatroom by an outlet placed in the lower part of the communicating door. In general, the coatroom should be easily accessible with an outside exposure to insure the admission of sunlight and window ventilation.

The width usually advised for coatrooms is four feet, with fifty linear feet of wall space for each twenty-five pupils. Suitable pegs or hooks should be provided and located on the walls at various levels for the accommodation of children of different heights. Racks or frames for drying moist clothing are rarely seen, but are a most valuable species of furniture in the coatroom.

The addition to the schoolhouse of a room that will be available as a meeting place for people of the community is an innovation that cannot be too highly commended. Finally, both the auditorium and the surroundings of the schoolhouse should receive careful attention. Flowers and shrubbery should be set out and placed under the care of the pupils.



MODEL FLOOR PLAN FOR SMALL SCHOOLHOUSE OF TWO ROOMS.

COMMUNITY COURTS *for* FACTORY WORKERS

By

CHARLES ALMA BYERS

HERETOFORE the community court idea has been utilized principally for the improvement of city real estate for income purposes. In the West, particularly, community courts have become very popular and as investments have proved both invariably safe and quite lucrative. Designed to serve as a sort of substitute for apartment houses and flat buildings of the ordinary kind, they are often spaciously planned and artistically executed, with effective landscape gardening, especially when located in districts where high rental charges can be made.

The idea has also been adopted, to some extent, as a method of property improvement in districts restricted to the homes of industrial workers. However, as yet, the courts so located are usually owned by individual investors, and here, too, they commonly yield a very satisfactory revenue. Hence, proving profitable when utilized as a purely investment proposition, the idea should also appeal to large manufacturers and other industrial companies which find it necessary to provide housing facilities for their numerous workers. The plan has the advantage of conserving ground space; and, when properly employed, it means, as compared with the usual factory settlement creation, a much more livable type of home, both in interior conveniences and in outward appearance.

Briefly, the community court—sometimes called a "bungalow court," because of the style of its houses—consists of a number of small individual homes grouped about a sort of common parking scheme. The houses, containing all the way from three to six rooms each, are in most cases only a single story in height, although occasionally some of them will possess upstairs sleeping rooms; and, while each unit usually comprises a single home, sometimes one or more of the houses of a certain court will be composed of two apartments, each, of course, with its own separate entrance. In some arrangements each unit will be of more or less different architectural style, while in others the style of all will be quite identical.

Through the centre of the space allotted to the court invariably runs a cement or brick paved walk, and in some instances an automobile driveway, toward which the several houses are planned to face. The grounds should be, and usually are, attractively laid out, with small lawns and a garden-like planting of flowers and shrubbery and perhaps a few trees. The garden work is naturally planned at the time the court is being designed and constructed, and not infrequently is kept in order thereafter by the owner's privately employed attendant. It is largely due to the attention given to the matter of garden planning and upkeep that the community court is made commendable and inviting to tenants. Then, too, its houses are more or less closed off from the public street, and hence there is provided greater safety for the play of small children.

The proper employment of the idea also means that the houses themselves, while perhaps small, should be fairly substantial and warmly constructed; and, of course, conveniently and cosily planned and finished inside. In fact, in the latter respect, they usually constitute veritable gems, especially in the way of built-in features, such, for instance, as window seats, bookcases, china closets.

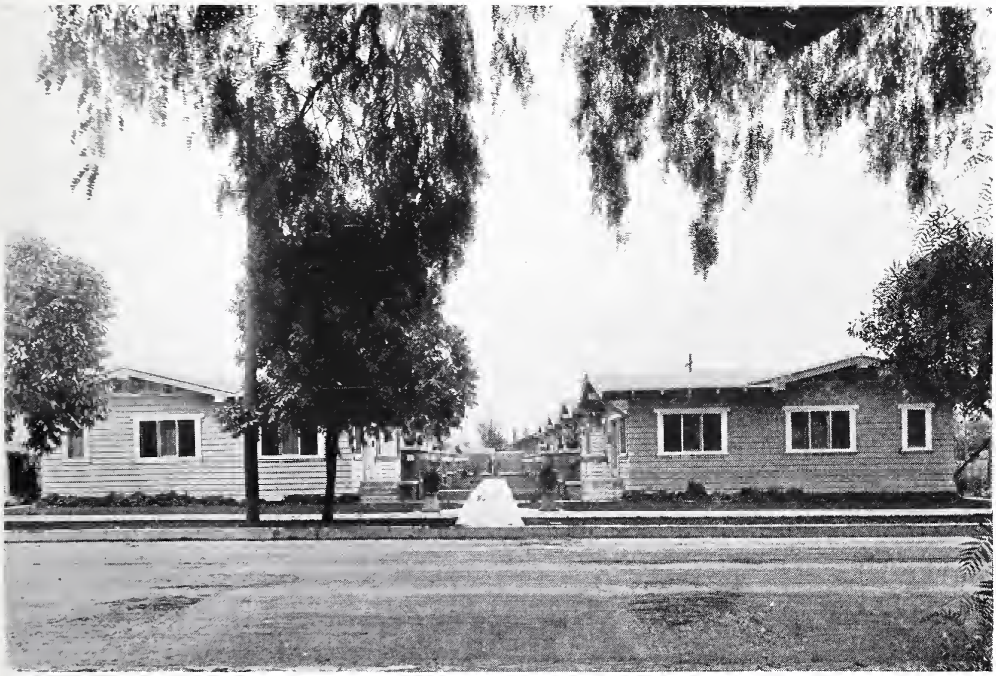


FIG. 1. EIGHT HOUSES ON A PLOT 60 BY 100 FEET.

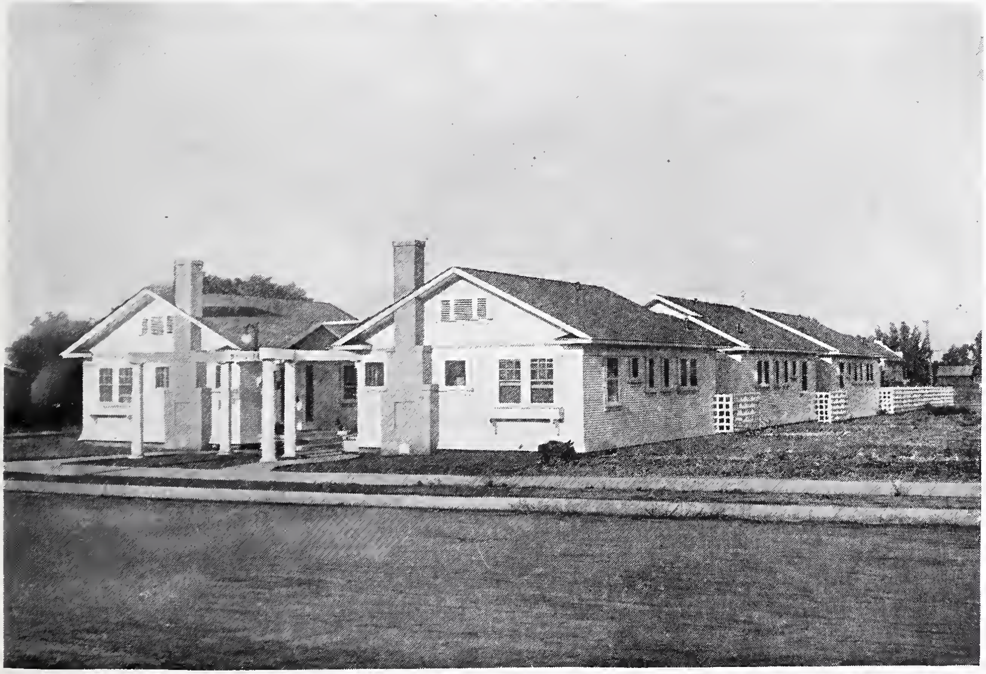


FIG. 2. SEVEN HOUSES ON A PLOT 50 BY 150 FEET.

kitchen cupboards, and so forth, as well as perhaps a fireplace. Moreover, the houses are often maintained completely furnished by the owner, in which cases the interior is naturally considerably enhanced in appearance by the furniture having been specially selected to match the finish. This plan is considered necessary, of course, when the court is intended to directly compete against furnished apartment houses.

As showing some of the possibilities of the community court idea, particularly in its application to industrial settlements, the accompanying illustrations should be referred to. All of these courts are of the inexpensive kind, and yet the homes they provide are attractive and comfortable. The manner in which they conservatively utilize their respective ground plots should also be observed.

The first of the courts here shown (Fig. 1) occupies a city lot of sixty feet frontage and one hundred and twenty feet depth, and contains a total of eight individual houses, or four on each side of the walk that pierces the centre. Each house is an exact duplicate of the others in architectural style, size and finish, and contains living room, dining room, kitchen, bathroom and one bedroom. The outside walls are covered with plain siding, painted a light gray, while the trimming is done in white; the roof covering is of a gray roofing composition, and the porch masonry, including the flooring, is of cement. The interior finish is in pine, the woodwork of the living room and dining room being stained a fumed-oak color and that of the remaining rooms painted white. Of the two principal rooms the walls are papered and the floors are of oak. The living room of each contains a built-in bookcase and a window seat; the dining room has a built-in combination of sideboard and china closets; the kitchen possesses a hot-water heater, cupboards and other usual conveniences, and a closet is a feature of the bedroom. The houses are heated in winter by gas radiators. Including its proportion of the original garden work, the construction cost of each house was approximately $1,200.

The second court here illustrated (Fig. 2) makes use of a plot fifty feet wide and one hundred and fifty feet deep and consists of seven separate cottages—three on each side of the centre walk and one facing the centre at the rear. Here again the houses are identical in size, style and finish, except that the two next the street and the one in the rear possess a large outside chimney. Suggesting the Colonial style, the sided walls, as well as the trim, are painted white, and the shingled roof is painted a bright green, while all masonry work consists of white cement. In each, the rooms are living room, dining room, kitchen, bathroom and one bedroom; although the living room is equipped with a disappearing bed, that makes it serviceable as a sleeping room also. The woodwork is finished in white throughout, enamel being used for the bathroom and kitchen, and the floors of the living room and dining room are of oak. Three of the houses have large fireplaces in the living room, and in the other four this room has a gas grate, designed in fireplace style. The cost per unit in this case, including the work on the grounds, was about $1,100, when built a few years ago.

The third illustration (Fig. 3) shows a court that also contains seven individual houses; but here the arrangement is more compact, the size of the lot being but fifty feet frontage and one hundred and twenty feet depth. The houses are of the bungalow type, and therefore of somewhat rustic outside appearance. The walls are sided with rustic redwood, which, together with the exposed framing timbers, are stained a rich brown color; and the masonry work, save for the cement-paved walks and the cement flooring of the porches, consists of brick, while the roofing is of gray composition. In these houses the living room and dining room are combined into one; and the other rooms are kitchen, bathroom and a bedroom. The combination room is finished in pine stained a dark Mission oak color; while the flooring is of oak, and the woodwork elsewhere is finished in white enamel. The houses are heated by gas radiators. The cost of each, including its proportion of the garden work, was a little less than $1,000.

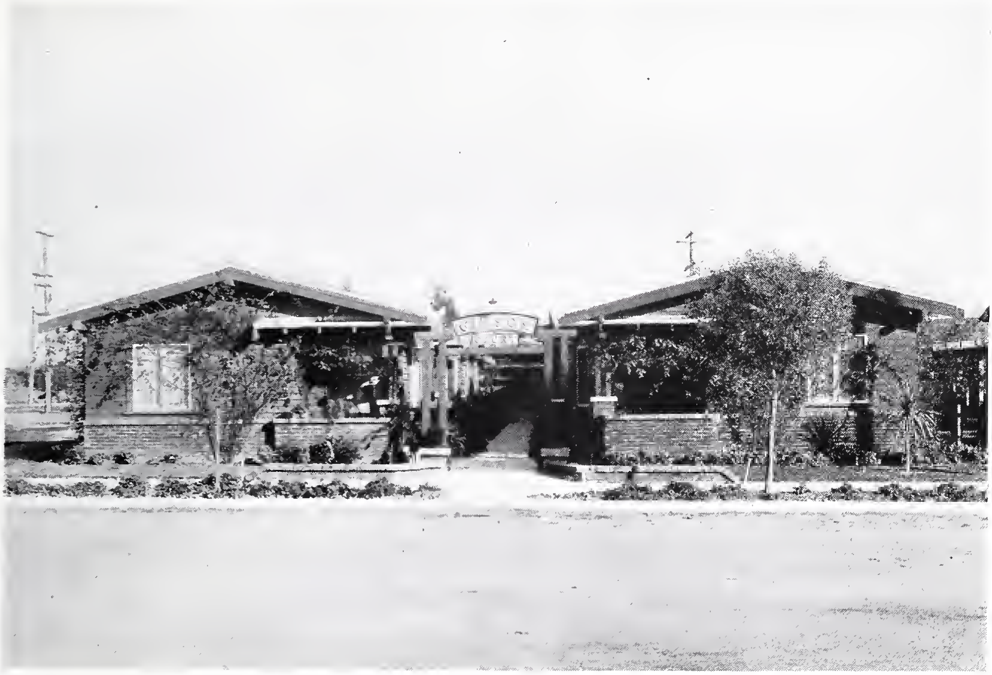


FIG. 3. SEVEN HOUSES ON A PLOT 50 BY 120 FEET.

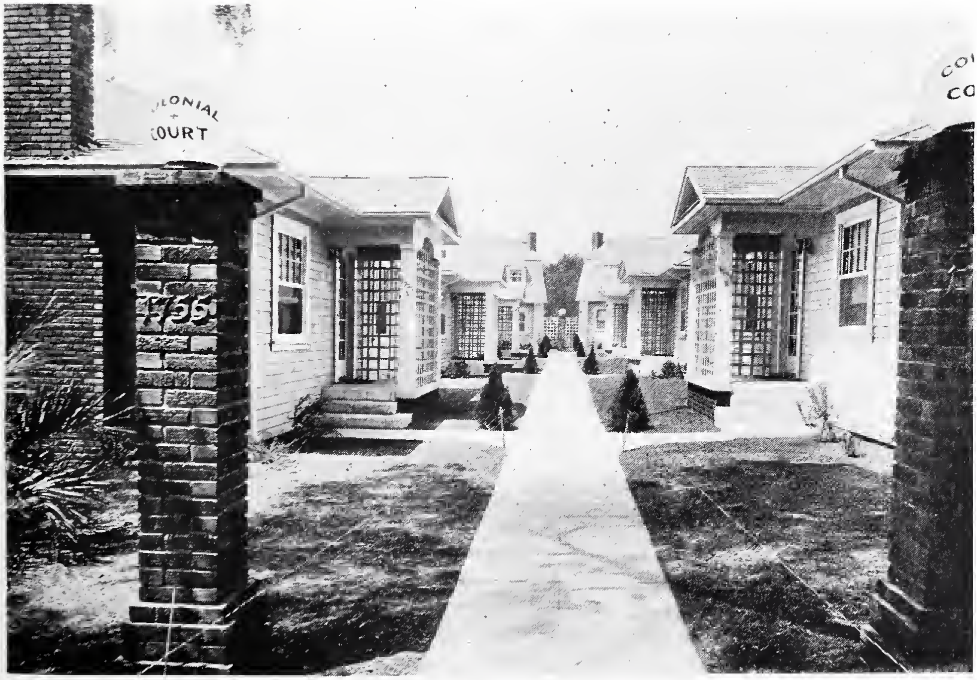


FIG. 4. EIGHT HOUSES ON A PLOT 60 BY 160 FEET.

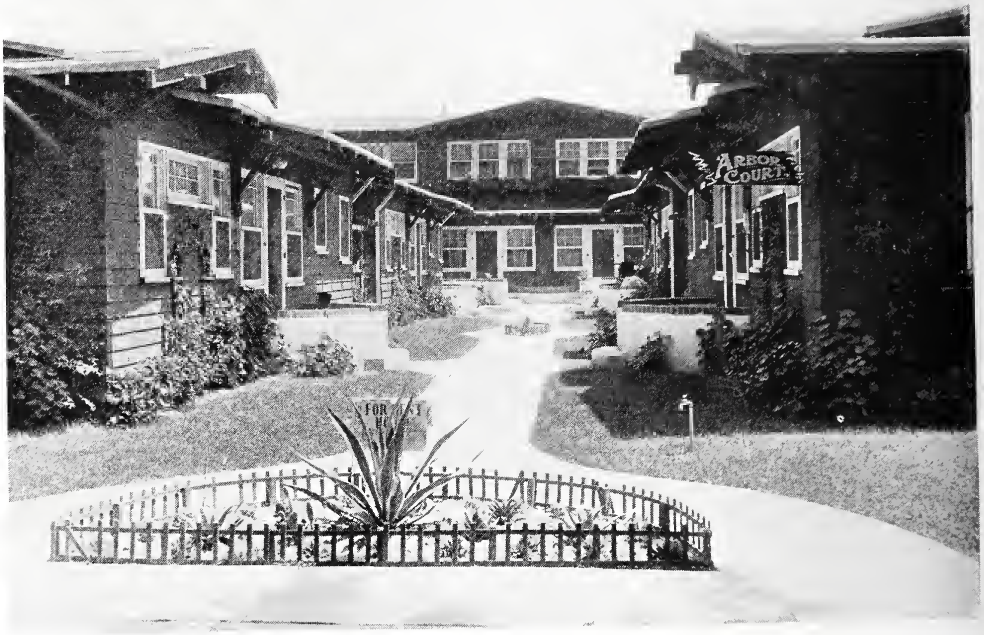


FIG. 5. FOUR SINGLE HOUSES AND ONE TWO-STORY DOUBLE HOUSE ON A PLOT 60 BY 140 FEET.

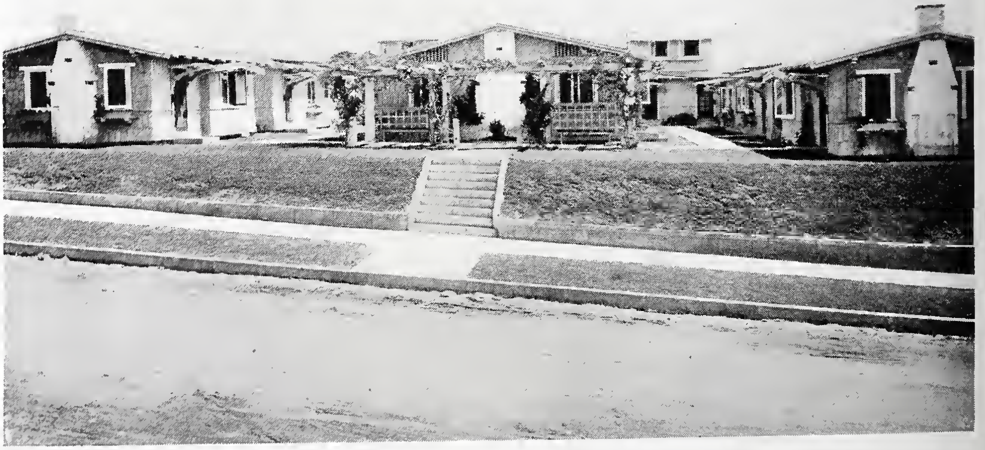


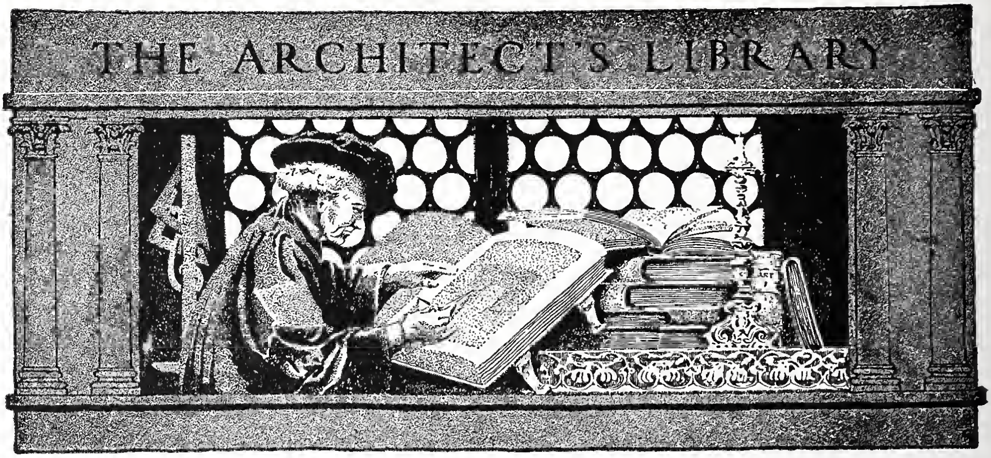
FIG. 6. THIS COURT, COMPRISING THREE ROWS OF HOUSES AND ACCOMMODATING SIXTEEN FAMILIES, IS 80 BY 160 FEET.

The court shown in the fourth illustration (Fig. 4) utilizes a plot of sixty feet frontage and one hundred and sixty feet depth and contains a total of eight separate homes. Three of the houses on either side of the centre walk are but one story high and correspond one with the others in architectural style; but the two in the extreme rear, each identical with the other, possess second-floor rooms also. Both the walls and the roof of each are shingled and painted a light gray, while the trimming is done in white; and the masonry work, which includes a large outside chimney for each of the eight houses, consists of cement for the steps and the paving and dark red brick elsewhere. Each of the one-story houses contains living room, dining room, kitchen, bathroom and a bedroom; while the two two-story houses have living room, dining room and kitchen on the first floor and two bedrooms and a bathroom on the second floor. The woodwork throughout is enameled, to produce a Colonial effect, and the fireplace in each of the living rooms is of brick. Hardwood floors prevail in the living room and dining room, and the fireplaces are supplemented in winter by gas radiators. The average cost per unit, including the original garden work, was about $1,600.

The fifth illustration (Fig. 5) shows a court consisting of four single one-story bungalows and a double two-story house, the latter facing the court space from the rear. The walls of all are shingled, the shingles being stained a dark green shade, and the trimming about the doors and windows is done in white. The roof covering is of gray composition, and the masonry work, save for the brick used as a coping of the entrance-porch walls, is of cement. The single bungalows contain the usual four rooms each, and each half of the two-story house possesses an additional bedroom. The living rooms and dining rooms are finished in a stained-pine imitation of fumed oak; while their floors are of oak and the pine woodwork elsewhere is enameled. The heat is supplied by gas radiators. This court occupies a plot of sixty feet frontage and one hundred and forty feet depth, and the construction cost per apartment, with garden work, amounted to approximately $1,700.

In the last illustration (Fig. 6) is shown a community court of somewhat unusual arrangement, in that it is designed with three rows of houses instead of two. The outside row on either side is composed of one single and one double bungalow; and comprising the centre row are three double ones, while the two two-story houses in the rear also consist of two apartments each. Therefore, the court provides a total of sixteen apartment homes, each with its own private entrance; yet the space occupied by it is but eighty feet wide by one hundred and sixty feet in depth, or equivalent to two forty-foot lots. Each apartment, with the exception that those of the two-story houses in the rear possess an additional sleeping room on the ground floor, is composed of a combined living room and dining room, a kitchen, one bedroom and the bathroom. Several of them have open fireplaces in the living room and the others have gas grates for heating. The combined living room and dining room in each instance has its pine woodwork stained a soft olive-green tint, and elsewhere the woodwork is enameled white. The average cost of each apartment, including its proportion of the garden work, was but $900, when built a few years ago.

All of the community courts here illustrated are located in California, and, as will perhaps be evident, are intended to provide homes that may be cheaply rented to working people. The houses are conveniently and cosily planned inside, invariably including an interesting and serviceable assortment of built-in features; and that they are attractive in outside appearance, in respect to architecture and garden setting, is made plain by the pictures. It may be also stated that some of the houses of the courts are for rent completely furnished, which has added but slightly to the investment represented by each apartment. And while these particular courts are owned by individual investors, it, nevertheless, must be apparent that the idea is equally adaptable for use in factory settlements.



WAR BOOKS OF THE CATHEDRALS

By BARR FERREE

II.—VERDUN

NO one thinks longer of Verdun as a cathedral city. Yet the cathedral of Verdun is the dominating building of the heroic city. Consecrated in 1147, it was much changed in the fourteenth century and especially after a fire in 1755, one of the towers having been rebuilt after that date. The plan is unusual for a French church, consisting of double transepts and including a cloister. At one time it had four towers, two east and two west; those of the west end alone remain. The cathedral has been greatly damaged in the siege. Fortunately, a very competent account of it was published in 1909 by the Abbé Ch. Aimond: *La Cathédrale de Verdun* (Nancy). It is a scholarly book, reviewing the history of the cathedral and describing it in a modern way, and is abundantly illustrated. A much older book, with chapters on the cathedral and dealing particularly with the bishops, is the *Histoire Ecclésiastique et Civile de Verdun* by N. Roussel (Bar-le-Duc, 1863, 2 vols). *Le Pays Verdunois,* by Léon Bigot (Verdun, 1903), is a summary guide to the city.

The architectural literature of Verdun is far from rich, but a whole library of new books have been issued within the last year dealing with the great siege of 1916. It is but fair to say that the architectural interest of these books is quite negligible. The cathedral of Verdun possesses no interest comparable with the great church at Reims that has made it the chief point of interest in the bombardment of that city. Nor have its injuries been so great as to call for protest from the civilized world. It is not the buildings of Verdun, ruined as many of them now are, that excite interest, but Verdun itself, its colossal siege, its heroic resistance. Verdun now stands for something that, prior to February, 1916, did not exist in the world. Its soil has become sacred, its buildings and forts consecrated and its most insignificant stones are symbols of glory. Anything relating to Verdun is of interest, although not every book published on it has value.

They come thick and fast. Participants in the great conflict have had time to write out their experiences; observers have found material from which to draw more or less coherent narratives. As a work of literature no book on Verdun equals *Les derniers Jours du Fort de Vaux,* by Capt. Henry Bordeaux. It is a magnificent and moving account of the tragic days at Fort Vaux from March 9 to June 7, 1916. One could not, indeed, write tamely of the events transpiring in this outpost of Verdun; for Capt. Bordeaux's book not only deals with thrilling events, but is written in a fine literary style that makes it a work of literature as well as of truthful history. It has been translated into English and has been continued in a second volume, *La Chanson de Vaux-Douaumont: les Captifs délivrés.*

A useful account of the whole siege down to December 15, 1916, is contained in *L'Epopée de Verdun* by Gaston Jollivet. The author cites many contemporary accounts that originally appeared in the Paris newspapers; but it is well to have these in permanent form, and they have been woven into a continuous narrative that is both comprehensive and thorough. Much briefer, because dealing with a lesser period, is *L'Attaque sur Verdun,* by Commandant Bouvier de Lamotte. It is confined to the events between February 20 and March 16, 1916, and thus deals with the opening of the siege. The author presents a detailed account of all the military operations and illustrates his text with many maps. Another book that may be bracketed with these is *La Bataille de Verdun,* by Henry Dugard. He covers the time from February 21 to May 7, 1916. He quotes largely from participants and gives many separate chapters on special incidents, thus making his book especially helpful to any one wishing to know the particulars concerned with special events and localities.

Quite in a class of its own is *Ceux de Verdun,* by Lieutenant Péricard. The author's aim is to describe the state of mind of the poilus. No one can question his sincerity or his success; yet it is a most painful book. The horrible details of soldier life at Verdun are revealed without reservation. The book fairly drips horror and blood. No book thus far published so completely reveals the dreadfulness of modern warfare as practiced at Verdun. It is an unpleasant book to read, yet necessary to anyone who would understand what has been transpiring before Verdun.

Colossal heroism—the words do not exaggerate—is described in the section of *Avec les "Diables Bleus,"* dealing with Fort Vaux, by the Chaplain of the Battalion de Chasseurs à Pied. A very brief account it is true, but a marvelous picture of French heroism. In striking contrast to these books, which even in times of dreadful trial are filled with French hope and faith, is the picture of the German state of mind shown by Sous-Lieutenant Louis Madelin in his book *L'Aveu. La Bataille de Verdun et l'Opinion Allemande.* The author gives many letters and notes taken from German prisoners or found on German bodies, reproducing many in facsimile. They deal with the early days of the siege, the first two or three months, and even at that time show great discouragement among the invaders.

Sous Verdun, by Maurice Genevoix, treats of the period August to October, 1914, and is thus concerned with the early days of the Great War. It has been translated under the title of *'Neath Verdun* and contains little as to Verdun. *Verdun,* published as a "brochure populaire" by André Vervoort, is a brief and useful chronology of the siege. *L'Enigme de Verdun,* by C.-Henry d'Estre, is an essay on the causes and genesis of the battle. *Aux Héros de Verdun,* by the Abbé Thellier de Poncheville, is a series of addresses based on events at Verdun. *Verdun, Ville Immortelle,* by Charles Guyon, is an account of the siege prepared for children. Of the books of poems, inspired by Verdun, mention may be made of *Ceux de Verdun,* by André Suarès.

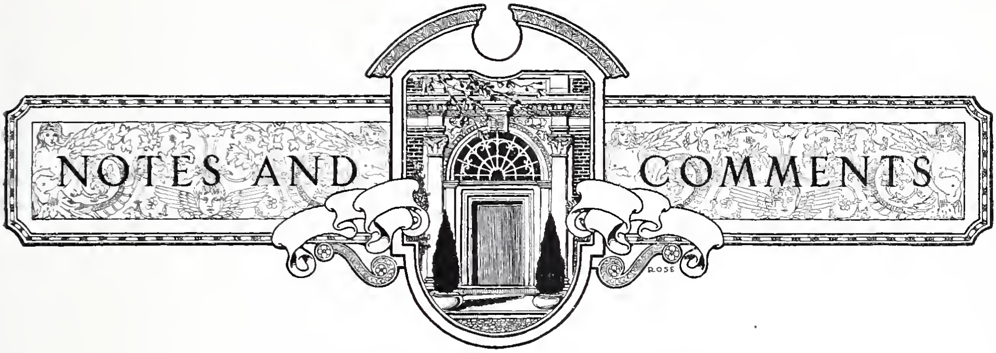
But of all the books on Verdun the most interesting contains no text whatsoever. Such is the album of sketches by Lucien Jonas, entitled *Verdun: Mars-Avril, 1916.* The book has been issued in a form that perhaps only a Frenchman would have thought of, having the outward appearance of an artist's sketch book, held by a rubber band, and provided with a pencil holder. It has been published in two forms: one in black and white, the other colored by hand; in the latter instance it is, of course, a perfect facsimile of a sketch book. There are many views of places in and around Verdun and numerous portraits of officers The latter are perhaps rather too predominating; but after all it has been the men who have held Verdun, and one cannot but be grateful for these personal souvenirs.

Another deeply interesting book of illustrations is *Verdun: Images de Guerre* by John Grand-Carteret. It contains 350 cartoons taken from French allied, neutral and enemy sources, and is a remarkable survey of the immense wealth of caricature that has centered in Verdun. The author has made two other collections of a similar kind, *Kaiser Kronprinz & Cie* and *La Kultur et ses hauts faits,* the three books presenting a most remarkable gathering of war caricatures, that rightly entitles them to a high place in the books of the war.

Verdun so completely absorbed the attention of the world in 1916 that English and American writers have given it some attention. G. H. Perris, in his *Campaign of 1914 in France and Belgium,* offers a chapter on Verdun in the early days of the war. Gerald Campbell, in his *Verdun to the Vosges,* makes some references to it, but at the time his book was written Verdun had not risen to the heights of fame to which it afterward attained. Frank H. Simonds, in his *They Shall Not Pass,* describes his visit to Verdun and gives an analysis of the attack and defence, which is of more than ordinary interest and value. The military books on Verdun in English are still few, for it is not known that any trained English or American observers followed the siege from beginning to end.

But if military books are scarce in our language this cannot be said of the memoirs of participants, of men serving with the Ambulance Corps or in the aviation service. Quite a number of these have appeared; they have a real and living interest. They are, however, but personal memoirs, and illustrate incidents in the siege without discussing it in its entirety. The tremendously interesting book entitled *Friends of France,* and dealing with the field service of the American Ambulance as described by its members, contains a couple of chapters on events at Verdun. The book should be read by every one interested in the war, and it is especially interesting as giving, without any intent, a remarkable picture of the heroic service done by the ambulance drivers. Henry Sheahan, who writes on Verdun in this volume, has published a book of his own, *A Volunteer Poilu,* a most interesting book, which gives two chapters to Verdun. Verdun again dominates *Flying for France,* by James R. McConnell, who was killed shortly after his book appeared. *With the French Flying Corps,* by Carroll Dana Winslow, relates experiences at Verdun and elsewhere.

Of strictly personal memoirs there is a tragic interest in *Victor Chapman's Letters from France.* A very new book of Verdun experiences is *At the Front in a Flivver,* by William Yorke Stevenson. In a final class must be placed books written by persons who were fortunate enough to visit Verdun during the siege. Such are *The White Road to Verdun,* by Kathleen Burke, and *To Verdun from the Somme,* by Harry E. Brittain. Fortunate folk, these, to visit so marvelous a place at such a time; but beyond telling us of this rare feat they contribute little to our knowledge of Verdun.



NOTES AND COMMENTS

The Wall Paper in the Jumel Mansion.

In the July and August numbers of The Architectural Record two articles appeared, written by Mr. Rawson Woodman Haddon, on the architecture of the Roger Morris House, illustrated by very complete measured drawings by Mr. Joseph Pelle.

I wish to express my obligation to Mr. Haddon for setting me right as to the probable extent of the restorations made in 1810 by Stephen Jumel.

Before proceeding to the defense of the wall paper, which is my object in replying to Mr. Haddon's article, I wish to say that the house is not an American house, designed by an American architect, but a type of Georgian house well known in England, and that the plans for its construction must have been brought over from England. Some years ago I was speaking of the house to Sir Purdon Clarke, and as soon as I mentioned the great parlor at the back he interrupted me with the question, "Are the corners cut off?" I said they were, but how did he know that fact, not yet having seen the house? He replied that he had seen such houses about London. Numerous English visitors have since confirmed Sir Purdon's statement, and if a duplicate of the house exists in America I have never heard of it.

"Carpenters and joiners," as they used to be called, were very competent at the time when the house was built, and it is possible that skilled carpenters carried out the English plans without the direction of an architect; but it is evident that Stephen Jumel employed an excellent architect for the restorations he made in the house in 1810, and that whatever fine work was done then was the untrammeled work of the architect so employed. It is not likely that Jumel had any knowledge of architecture or decoration, but he had the money to pay for both and the good sense to leave such details to his trained expert.

The restoration of the paper, then, in the octagon room was evidently done under the advice of the architect, and the architect who built the beautiful doorways for Stephen Jumel did not advise the restoration of the paper because it was beautiful, for it is distinctly otherwise, but because he believed it was the original paper hung in the house when the house was built and was the paper "of the time of Washington," which was not "an indefinite time," as claimed by Mr. Haddon, but so very definite that it could only mean the thirty-one days in the year 1776 when Washington occupied the house. In 1810, when Jumel bought the house, it was but forty-five years old, and it would not have been difficult at that time to have ascertained the facts about the original paper.

Even with the rough treatment it must have been subjected to, it is not strange that the original paper had hung on the walls of the octagon room for forty-five years, when we know that the reproduction made in 1810 hung on the same walls for eighty-four years and was in good condition when removed in 1894, even improved in tone, like an old rug, by the fading of its colors.

At the time when this paper was reproduced, last year, it had been in the house for one hundred and six years.

The frieze and base borders of the paper are of a classical design, generally spoken of as "Empire," but such designs were used before the "Empire period," and even before the Adam period, and are not sufficiently "Empire" to fix the date of the original paper. The claim is made that the paper was bought by the Jumels in 1810 to match their Empire furniture, but, in the first place, it is not known that they had any Empire furniture in 1810; and, in the second place, if they had bought a new paper in 1810 it would not have been printed in squares and pasted together to make the rolls, as Miss Sanborn tells us the Colonial papers were printed and pasted before 1790.

The paper put up in 1810 was so printed and pasted. The laps are three-eighths of an inch wide and hardly noticeable until held up to the light, and these laps are as firm today as they were the day the paper was made. The mistake that I made in the second reproduction was in not requiring the Birge Company to print the paper in squares and paste them into rolls. Stephen Jumel's architect was more exact in his requirement, and the reason that the paper was printed in squares in 1810 was to make it an exact reproduction of the paper so printed in 1745, which the architect who built the beautiful doorways would be very nice about.

There is interesting evidence that the house was papered when it was built, in two doors which were concealed by the same paper as that on the walls of the rooms. The door in the rear bedroom (see Mr. Pelle's plan of second floor) opening into the side passage has broken places in the present paper, showing the unpainted pine wood. This door is an original door having two broad panels on the passage-side and is hung with H and L hinges. The second concealed door is in the "Guard Room" and has been uncovered since Mr. Pelle's plans were drawn and opens into the indicated dark space, which was a closet.

Each of these doorways is, of course, without "trim," and seems to have been so treated to preserve a proper Colonial balance of doors in each room. In the bedroom, if the papered door had been a door with a trim, it would have necessitated the making of another door on the other side of the central door, and in the "Guard Room" the position of the two doors, if both had been full doors, would have been offensive to Georgian ideas of balance.

Until 1894, when the house passed into the possession of General Earle, the wall papers in all the rooms, except in the octagon parlor, had been put on in the old style of one layer of paper over another, and it would have been possible at that time to have secured samples of the original paper in each room.

The paper hung in the octagon parlor in 1810, as was probably the case with the original paper, was not pasted to the wall, but was hung like tapestry and was removed in 1894 and again hung free from the wall in another room. For three years after the city of New York bought the house a single watchman was in charge and visitors carried off samples of the old paper as souvenirs until not a complete panel remained. It is to the credit of the ladies who took charge of the house in 1916 that samples of the paper were preserved under glass.

William Henry Shelton.

Young Ambition's Ladder.

A bright-faced young architect came recently to visit us. He was just back from certain remote and little-traveled regions whose architecture is considered by students to be highly interesting. Because he had made the pilgrimage as winner of a traveling scholarship, we, in our unsophisticated way, supposed he had chosen the land in question in order to examine its unique fusion of Eastern and Western elements. Only old-fashioned folks, as we soon learned, would have ascribed such a motive.

He had gone where he did because the countries prescribed in the terms of his scholarship were impossible places to the peaceful student in these frightful days; and having had the choice forced upon him, as it were, he determined to make the best of it by "doing a book."

Now the preliminary step in doing a book is to consult the most commercial publisher discoverable and ask him to suggest the least-worked field. He will always be found guiltless of partialities. Fusion of East and West, glory that was Greece, grandeur that was Rome—all are alike to his open mind, provided only they lend themselves to the making of a salable book. As for the predilections and enthusiasms of the architect, he must not possess such hindrances to authorship. Off for the land indicated by the publisher as not yet done!

And here was our young friend back with his spoils—some hundreds of photographs, some sketches, and a well-lettered title-page, which announced that a distinguished American architect had contributed a short preface. Behold the book!

"Is there to be no text?" we ask.

"Text?" repeats the bookmaker. "Why, no one reads text today. Give an architect some good photos and a few measurements and he can build anything on earth. Why should he bother reading text?"

To one who writes serious architectural text this is a bit discouraging, but recalling that it is sinful to nurse wounded pride, we hazard a volley of stupid questions: Won't the architect have any curiosity about these photos and measurements you propose giving him? Won't he ask why all the houses, even the modern ones, are almost windowless? And why all, civic and domestic, are built on the same plan? And why they are flush with the street, palace and tenement alike? Won't he realize that there must be a reason for these distinctive treatments and that he ought to know that reason? And the people of whom this architecture is a perpetuated expression—won't he wish to know their racial characteristics and the influences and ideals they came in contact with?

No, positively no! the young visitor assures us. "All that sort of thing is superfluous in *this* country (the emphasis implying that I, with my antiquated notions, must belong to the Old World). Any architectural publisher will tell you to cut out the text and give him pictures. Pictures, plans, measurements—that's all a modern architect wants."

This lighthearted contempt for information and worse still, this overfeeding *ad nauseam* with photos indifferently taken and cheaply reproduced, are bound to be reflected in our architecture. Perhaps, indeed, the easily obtained photos are to blame for the contempt of text. They no longer illustrate a point, they are the point; they are not a means to an end, they are the end. The architect spreads out his manifold photographs, cribs a motif here and there, and puts up a building; then he takes its photo for reproduction in some architectural monthly where it serves both as advertisement of his genius and as inspiration for another looking for the easiest solution of his own problem. And that's the end of it! To this has the noble art of design descended.

Time was when the dedication of one's life to architecture presupposed an enthusiasm for what was or had been glorious and beautiful. The student knew that his subject was a record of the social and religious habits of various races and that it was intimately connected with their arts, their commerce, and their politics, and accordingly he expected to inform himself in just measure on those topics. Furthermore, he expected in due time to reflect contemporaneous life and conditions in his own work. What richness in this program, compared with that of the jaded "photo and a few measurements" type! The royal road to architecture with a vengeance!

How could any school, even a correspondence school, turn out this attitude of mind? How could any student to whom it has been pointed out that buildings, even in those periods known as revivals, are the outcome of social, historic, and geographical conditions—how could he smother the curiosity that would naturally arise as to these conditions the moment he first sees any given phase of the world's architecture? How could the mere set of photos (never forgetting the few measurements) satisfy this normal human inquisitiveness?

In the days before the snapshot was invented Filippo Brunelleschi set out from Florence for Rome. Not having consulted an enterprising publisher as to doing a book he had to support himself during his four years' sojourn in the Holy City as a goldsmith; but every spare moment of the four years was given, we are told by Vasari, to the most ardent study of the Roman monuments, in order to grasp the principles of the classic styles. Both in his day and for centuries after, Brunelleschi was counted a genius. Even Michelangelo was glad to study him. But what a poor pygmy he must shrink to now beside the modern youth who, from copious photos and a few measurements, can master and apply what it took the Florentine four years of ardent study to absorb!

Our own Thomas Jefferson, who was no mean builder in his day, said: "Architecture is a noble art and worth great attention"; and when he got to Nimes, where he could at last stand face to face with an entire classic building, he wrote that he was spending days and days gazing upon the little Roman temple there, "like an enchanted lover gazing at his lady." Poor simple Thomas, wasting hours and giving way to childish enthusiasms! Better a few quick sketches, a few measurements, and back post-haste to Virginia to design and build Monticello, Farmington, and the noble University!

It goes without saying that the student who is willing and even eager to eliminate so much in his own art eliminates even more of everything else. The men of general culture in the profession are few and steadily decreasing, in spite of our young visitor's assurance, given in all sincerity, that our American architects are better educated in every way than either the French or the English. When we contested the point and talked of that most admirable and practical architect, George Street, who, according to his biographer, Georgiana King,* went wide and deep in the subjects he had at heart, who mastered and spoke, besides French and German, both Italian and Spanish, who carried on his researches into Latin documents with ease and speed, who took in a vast deal of contemporary thinking and reading, and who wrote after many visits to Spain (not one flying trip, mind you) the best book ever written on Spanish Gothic—when we spoke of all these accomplishments of the English self-educated Street, we were told that the profession (God save the mark!) had outgrown all that sort of thing. And besides, who would think of reading Street today? Who would even buy his book, seeing that its few drawings were inadequate to the needs of the borrowing modern practitioner?

Perhaps the young man spoke truly, but it was a sad truth. It made us think of a certain wise old Scotchman whose grandson wished to enter an architect's office before completing his schooling. Getting an education, the old gentleman explained, was like making up a bed that one must sleep in later on. If the covers provided came merely to the edge of the mattress, of course one could sleep, but the cold crept in and one had an uncomfortable feeling all night long of adjusting oneself to the annoying scantiness of the bedclothes, pulling here and shifting there to fill a gap; but if, on the other hand, the covers provided were ample enough to permit of generously tucking them in under the mattress, one snuggled down with a delicious sense of adequacy and slept sound all night. Culture was to life, he said, just that extra length and breadth that gave the delicious sense of adequacy.

Of course, the modern architect argues that the complexity of life has forced more into his everyday program than the bygone generation had to face; but it is also true that the tendency to specialization has relieved him of much that was formerly undertaken by the architect. Surveyor, engineer, decorator, blueprint maker, telephone, automobile (whether his own or his client's) are all timesavers to him. Could he not put a few of the hours saved into informing himself as to what lies back of the too numerous photographs on which he has learned to rely?

We have mentioned that a well-known architect wrote a brief preface for the book in question (which we have not yet seen) and consented to let his name appear on the title page. This gentleman never learned the fine Gothic with which his name is associated from half-tones and a few measurements. The little minster churches of England and the stately cathedrals of France must have been studied devotedly by him; and then to round out his mind and give his builded stone the true flavor he must have absorbed much else that was medieval. Does he regret all this as time lost? Would he, if he could, discard the refinement of taste which he thus got? One is almost forced to think so on seeing his name attached to the new and rapid method for which this book stands.

If volumes like this, with their indiscriminately selected views and their absence of all information historical or critical, answer the American architect's needs and can therefore be endorsed by reputable men, it simply means that architecture has become a mere matter of knowing a few things and feeling nothing. It means that the successful man is he who puts up the most buildings on the rapidly-designed-from-photo system rather than he whose influence is all for the ennobling of the profession and the holding of high ideals before those about to enter it.

MILDRED STAPLEY.

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*George Edmund Street; Unpublished Notes and Reprinted Papers, with an Essay by Georgiana G. King. Published by The Hispanic Society of America, 1916.

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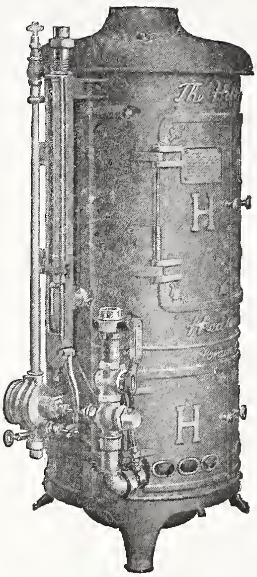

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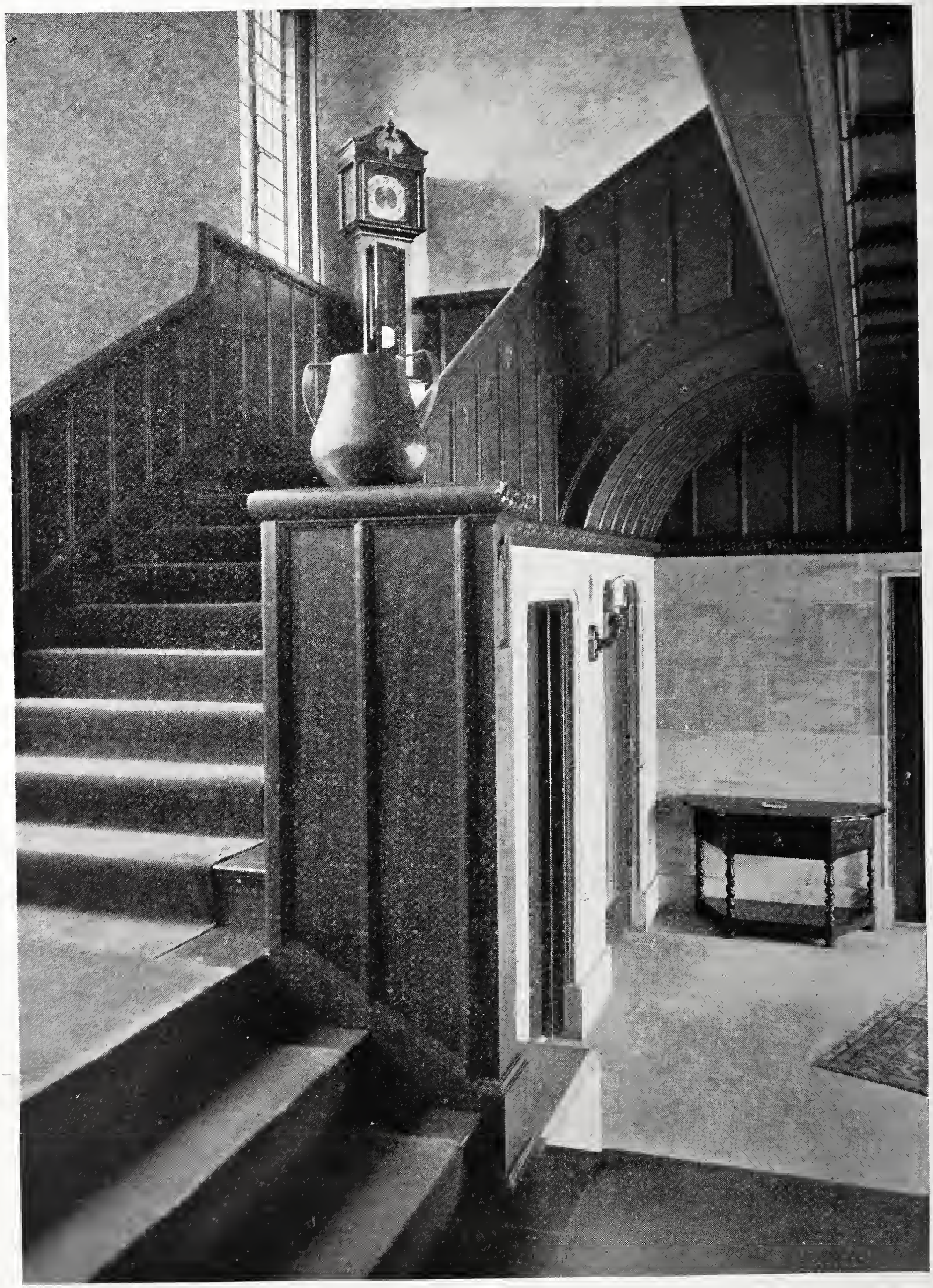

MAIN STAIRWAY—RESIDENCE OF HAROLD L. ICKES, ESQ., HUBBARD WOODS, ILL. PERKINS, FELLOWS & HAMILTON, ARCHITECTS.

THE
ARCHITECTVRAL
RECORD

VOLVME XLIII NVMBER III

MARCH, 1918

The RESIDENCE of HAROLD L. ICKES, Esq.

HUBBARD WOODS, ILL.

and the

RESIDENCE of MRS. CYRUS H. McCORMICK,

LAKE FOREST, ILL.

Perkins, Fellows & Hamilton, Architects

BY PETER B. WIGHT

THE two country houses here illustrated are by Perkins, Fellows and Hamilton, a firm whose designs offer an excellent illustration of successful "team work" by men working together for the best interests of their clients and for the development of a characteristic American architecture. The houses are of the highest class of materials and workmanship; they have been built for permanence, and are as nearly fire-resisting as it has been possible to make them, in accordance with the accepted dictum that fireproof construction is as essential in high grade residences, more especially country residences, as in any other kind of buildings. Among the unfortunate but needless incidents of country life in America has been the frequent destruction by fire of great country houses in isolated localities, beyond the reach of fire-extinguishing appliances.

Both of the houses which form the subject of this article are built within the boundaries of natural forests, being so completely surrounded by trees that they cannot be seen from the public road. In the Middle West, forest surroundings are the most precious possessions of people who are tired of the monotony of the endless prairies. Consequently, wooded tracts were acquired many years ago, when found in the neighborhood of rich and growing cities, by those who were able to preserve them for appropriate suburban improvements.

This was especially the case with the site of Lake Forest, Illinois, thirty-five

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miles north of Chicago. The writer saw it for the first time forty-five years ago, when it was a dense forest in that part which lies between the railroad and Lake Michigan. Winding roads had been cut through the forest, rustic bridges had been built over the ravines and the University had been established in a clearing in the centre; and there were a few private residences, all built of wood. West of the Chicago and Northwestern Railroad were farms, the woods having been nearly all cleared. The farms, extending westward about six miles, have mostly been bought by wealthy residents of Chicago, while the whole of the wooded part is laid out for suburban estates. The following are the principal native trees found at Lake Forest and throughout the North Shore district: Red oak, white oak, sugar maple, white pine, and red cedar. Among the numerous wild shrubs which make the underbrush are crab-apples, hawthorns, witch-hazel, pinnacled dogwood, June berry, and downy arrowwood; assuredly a rich variety.

The natural conditions found at Lake Forest exist also at Winnetka, Hubbard Woods and parts of all of the suburbs which lie between Evanston and Lake Forest. These locations were long ago secured by public-spirited men who parted with their holdings only on conditions precluding the destruction of the natural forests. Evanston is now a large and beautiful city; and while most of the forest trees on its site were sacrificed, they have been replaced by elms, maples and other shade trees.

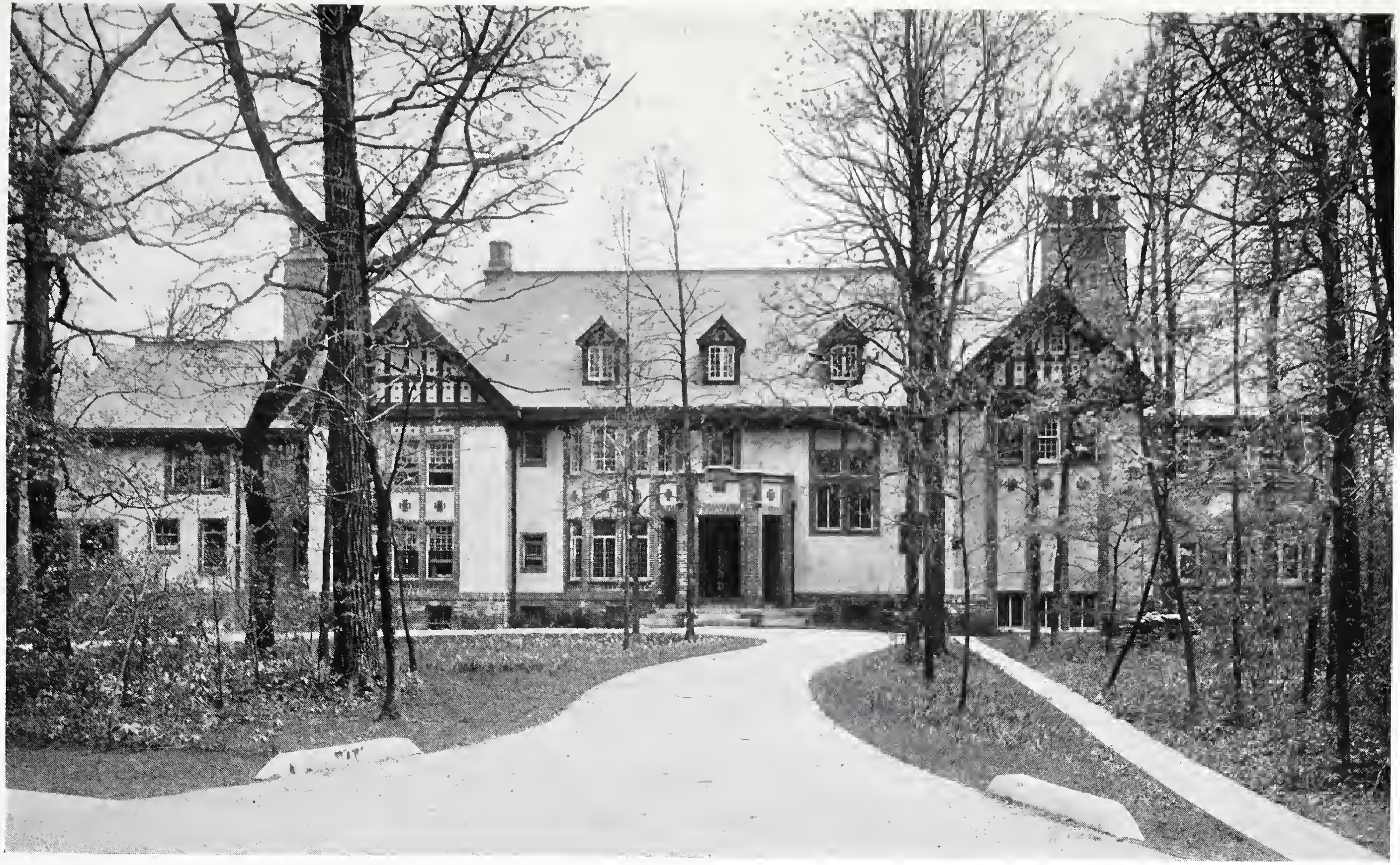
It may not be out of place to mention that the great Forest Preserve (for which an issue of bonds to the amount of eleven million dollars, authorized by the State, and now being expended by the Forest Preserve Commission of Cook County) will extend from the boundary line between Cook and Lake counties, near Hubbard Woods, completely around the west of Chicago, on the line of the Desplaines River. This will be a natural park, not improved with buildings. Mr. Dwight Heald Perkins, of Perkins, Fellows and Hamilton, was the moving spirit in bringing about this great forest reservation and is now a member of the plan committee of the Forest Preserve District Commission.

I.

The house of Mr. Harold L. Ickes is at Hubbard Woods, which lies between Winnetka and Glencoe. It is near the Sheridan Drive, but is approached by a private road from the Drive. A clearing was found in the woods sufficient for the house, and it was not necessary to remove any trees. The locations of the surrounding trees controlled to some extent the general plan, and there is no lawn and no view from the house except over a small natural clearing on the south side, where the ground was filled in and graded up to the terrace and the brick watertable. The view from the north shows the entrance side. It is the least important side, and the entrance is through a hexagonal porch and a small vestibule for protection from the weather. But when one enters through the inside door, one has a view of the interior of the main part of the first story, from the reception hall through the living room into the sun porch, and to the left into the dining room. The main stairway works around and over the small vestibule in a very ingenious manner. The walls of the reception hall are faced with smooth-dressed Bedford stone, and the ceiling is oak timbered and paneled under the concrete floor of the second story.

The library is approached from the first platform of the main stairway and consequently has a lower ceiling than the other rooms. This gives it more the character of a quiet and retired study, which it is. Raising the floor of the library has given more space for a billiard room, which is directly beneath it.

It must be explained that this is a structural tile and rough-cast plaster house and that no stone had been used on the exterior. The margins of all openings of the exterior, the door and window jambs, the arches and lintels, are all of red brick of varied shades running through the walls and forming a constructive margin to the hollow building tiles, twelve inches thick, which compose



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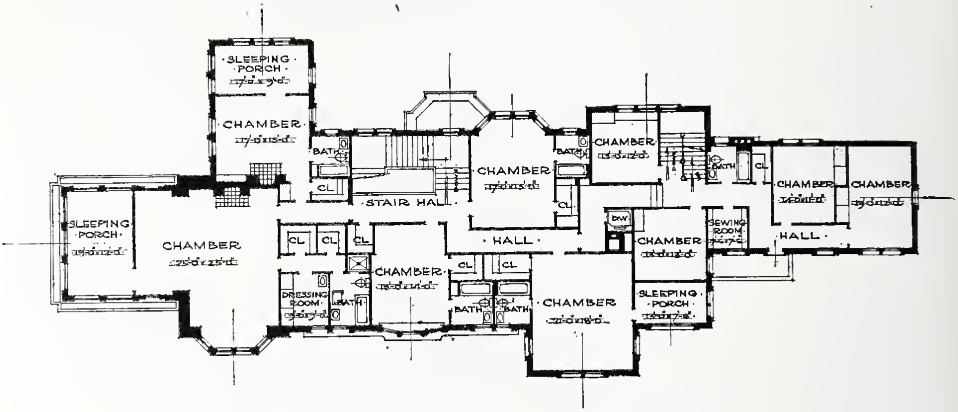

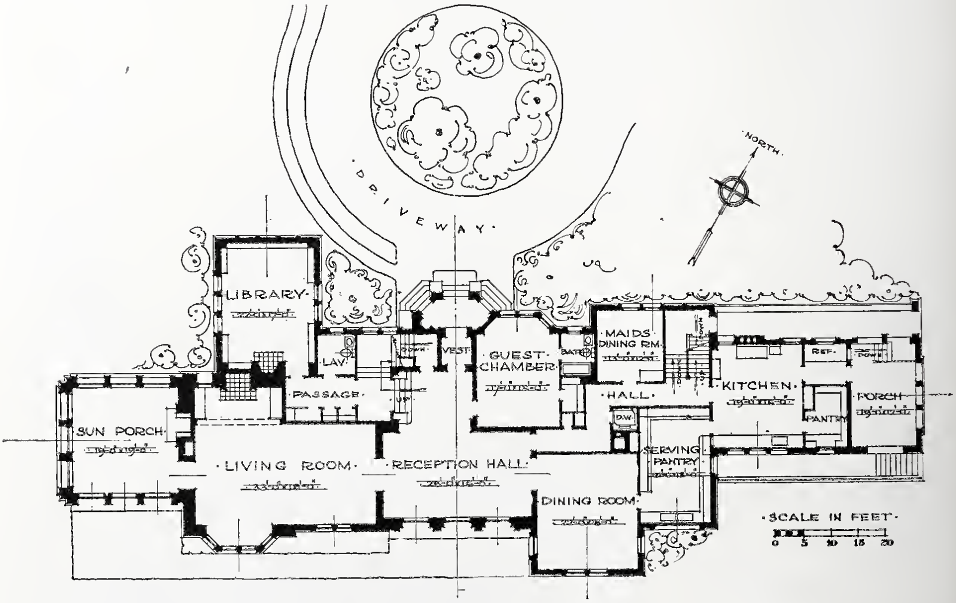

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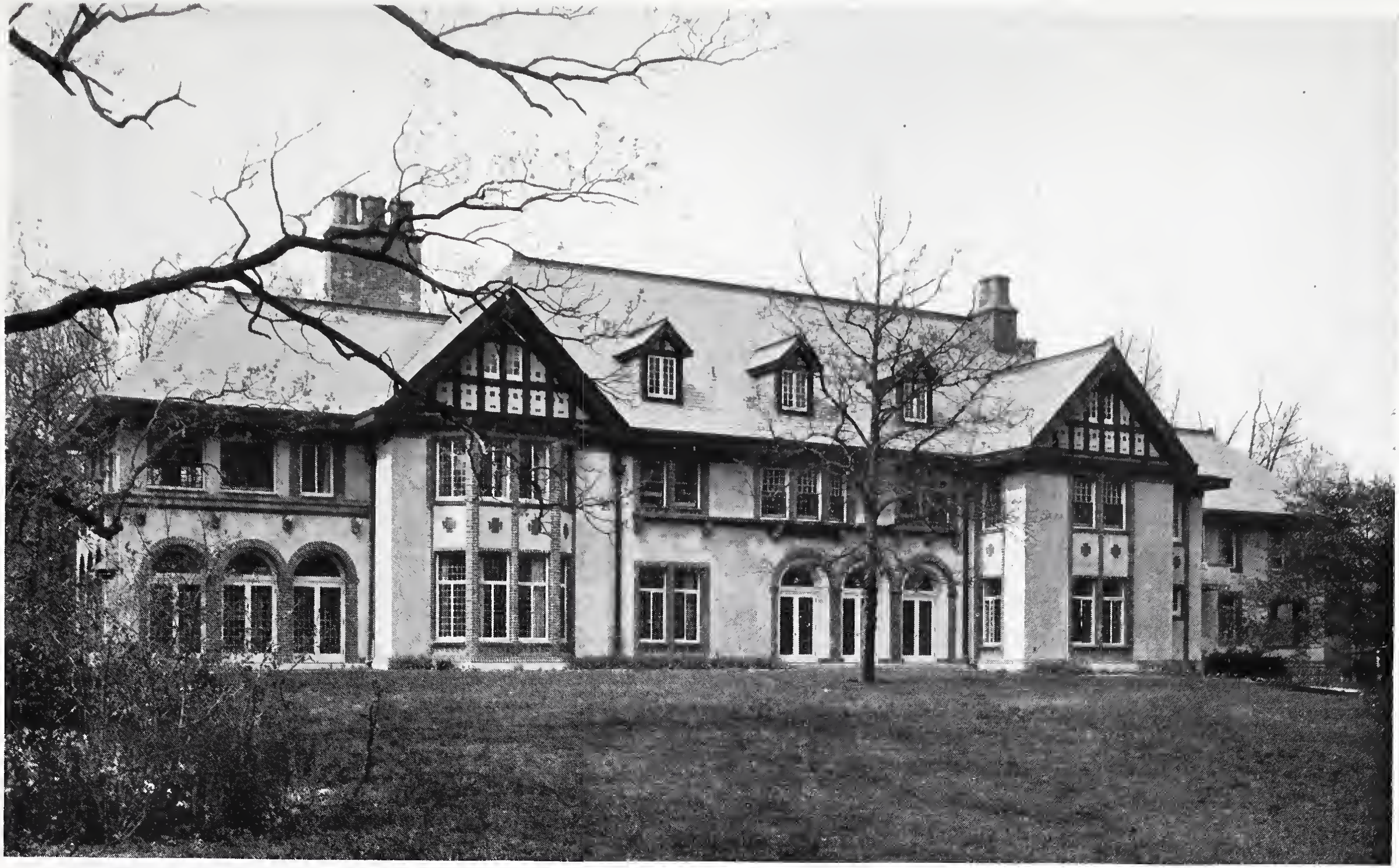

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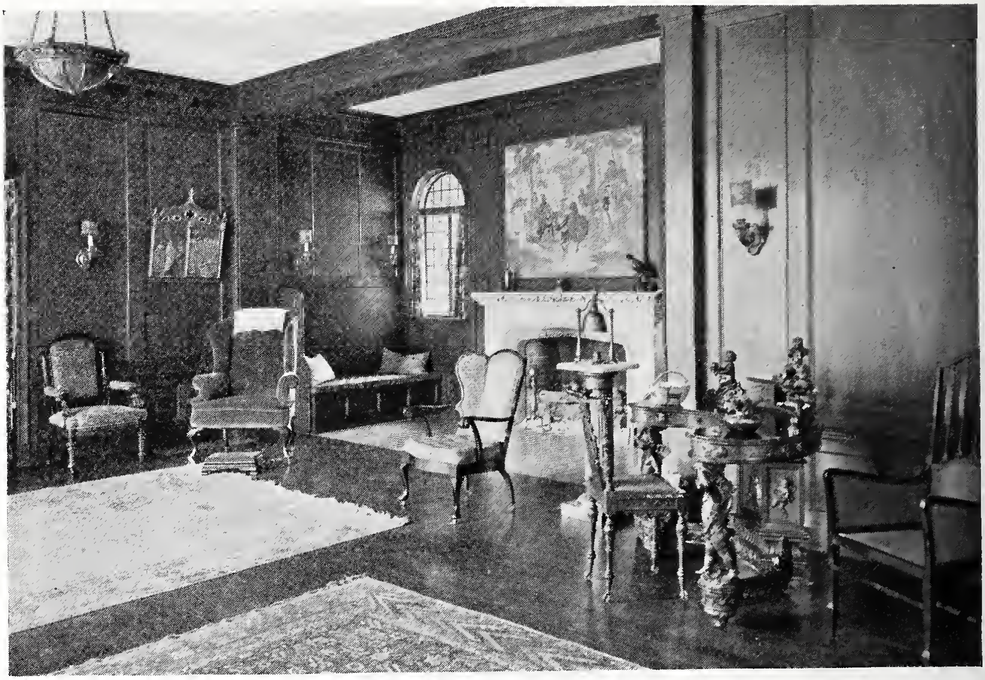

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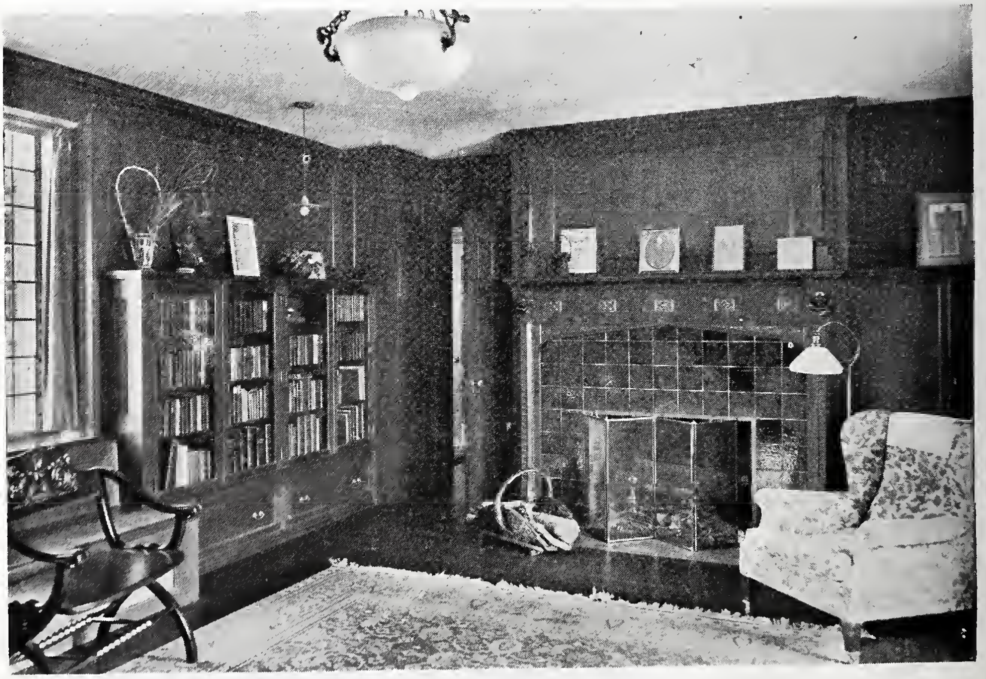

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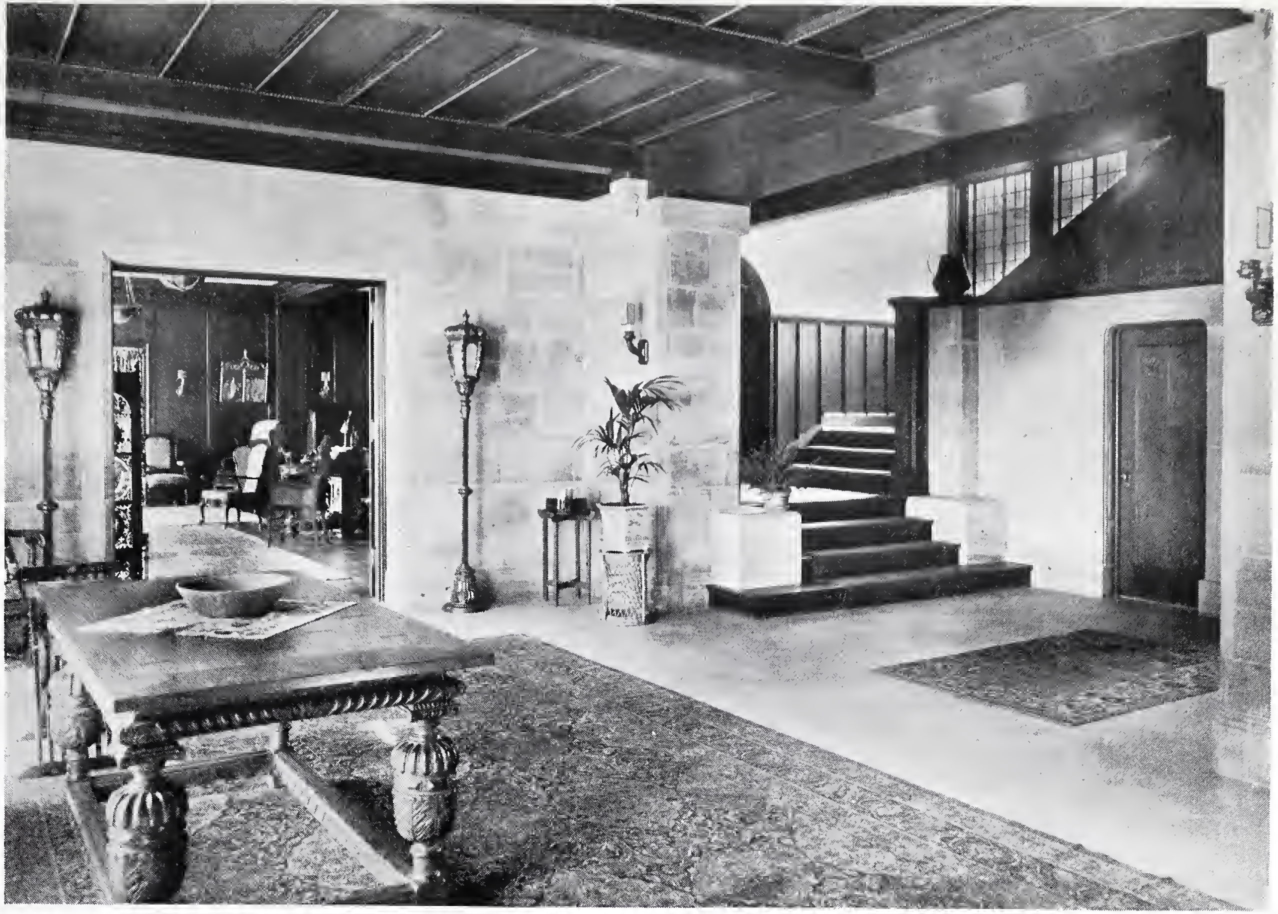

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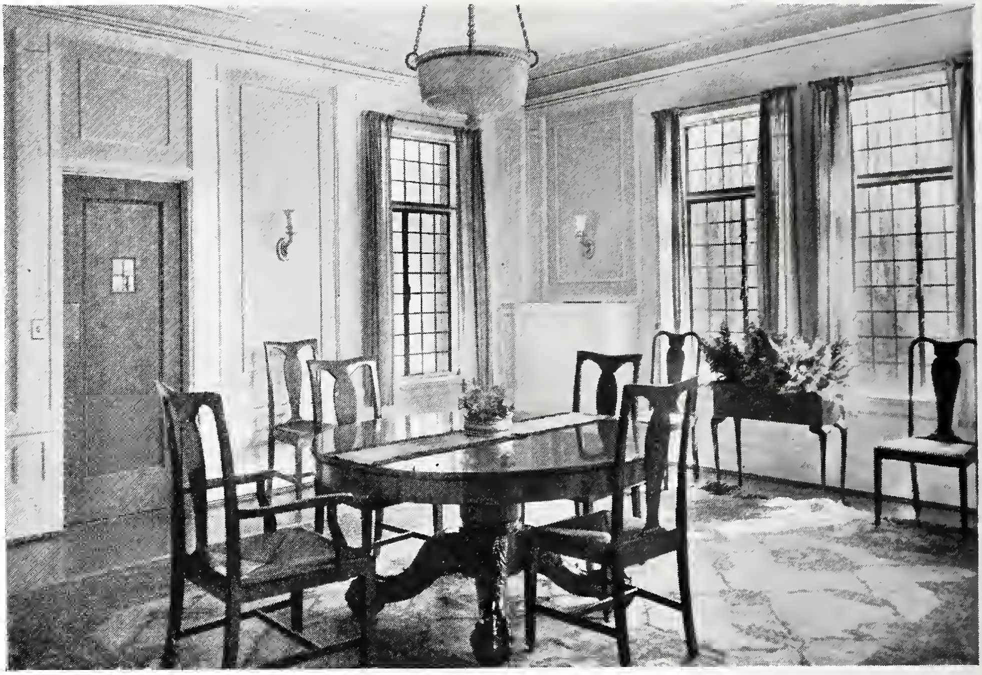

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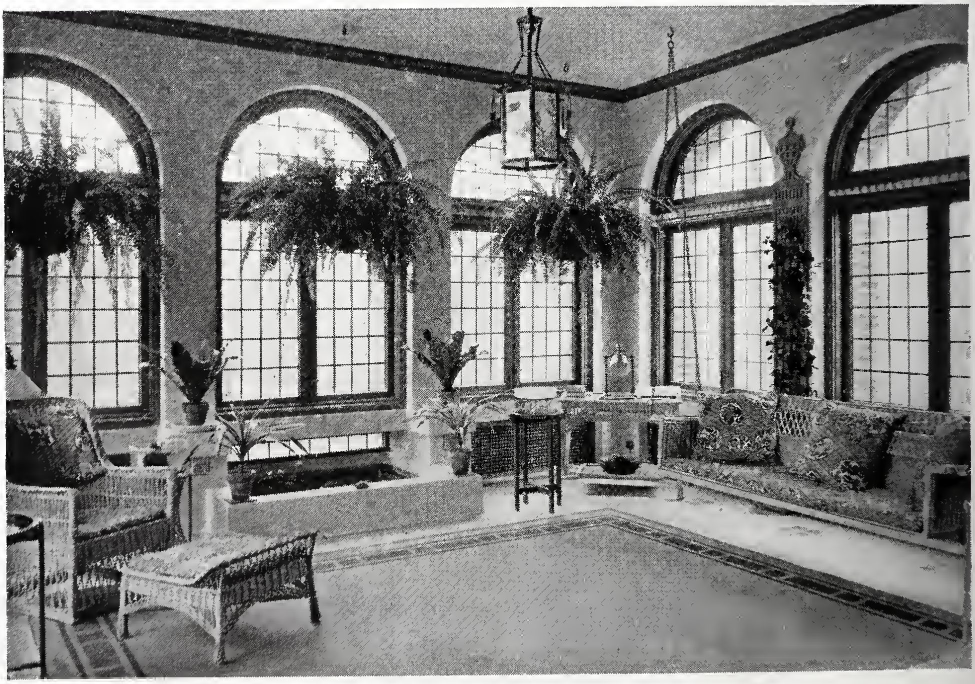

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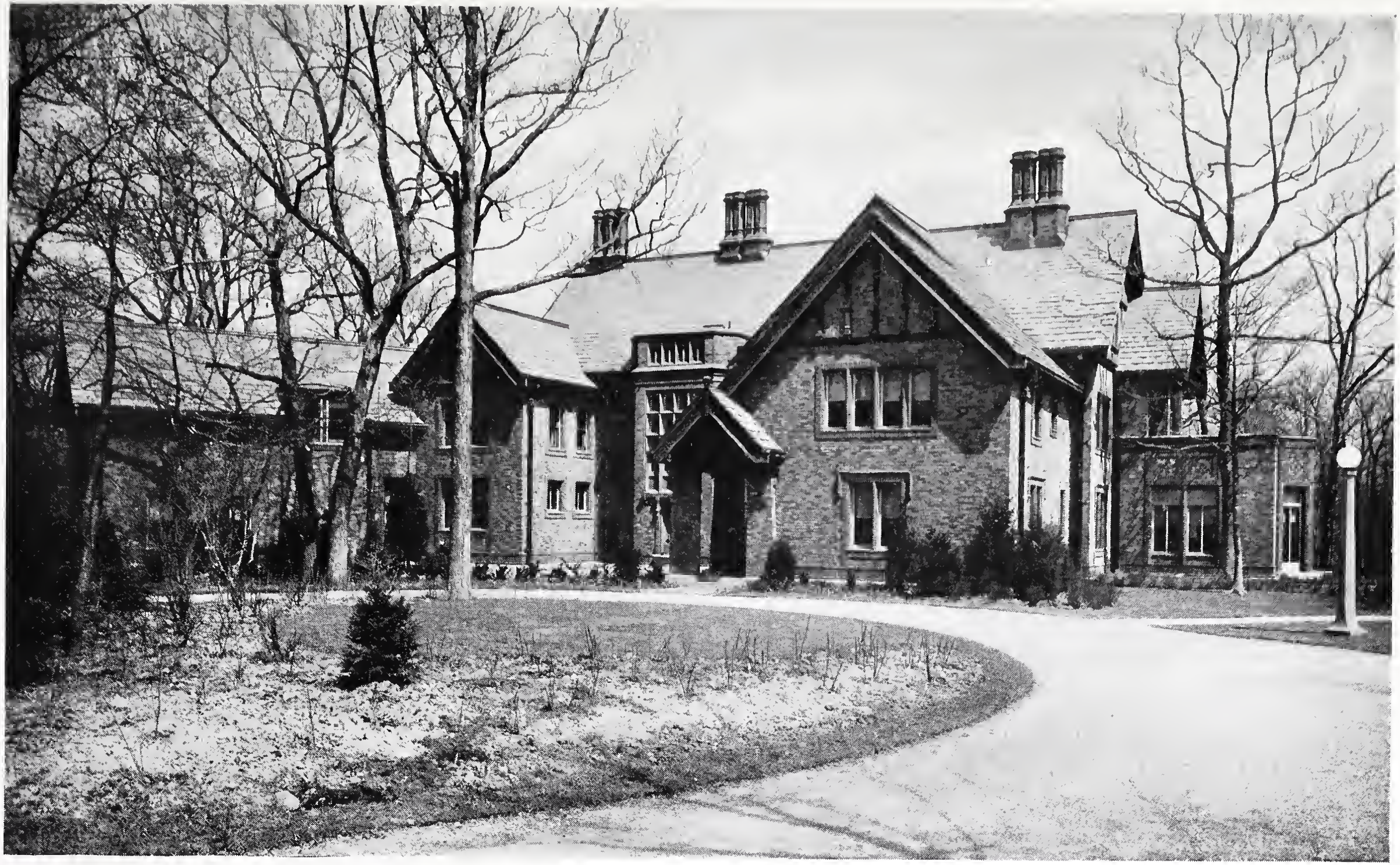

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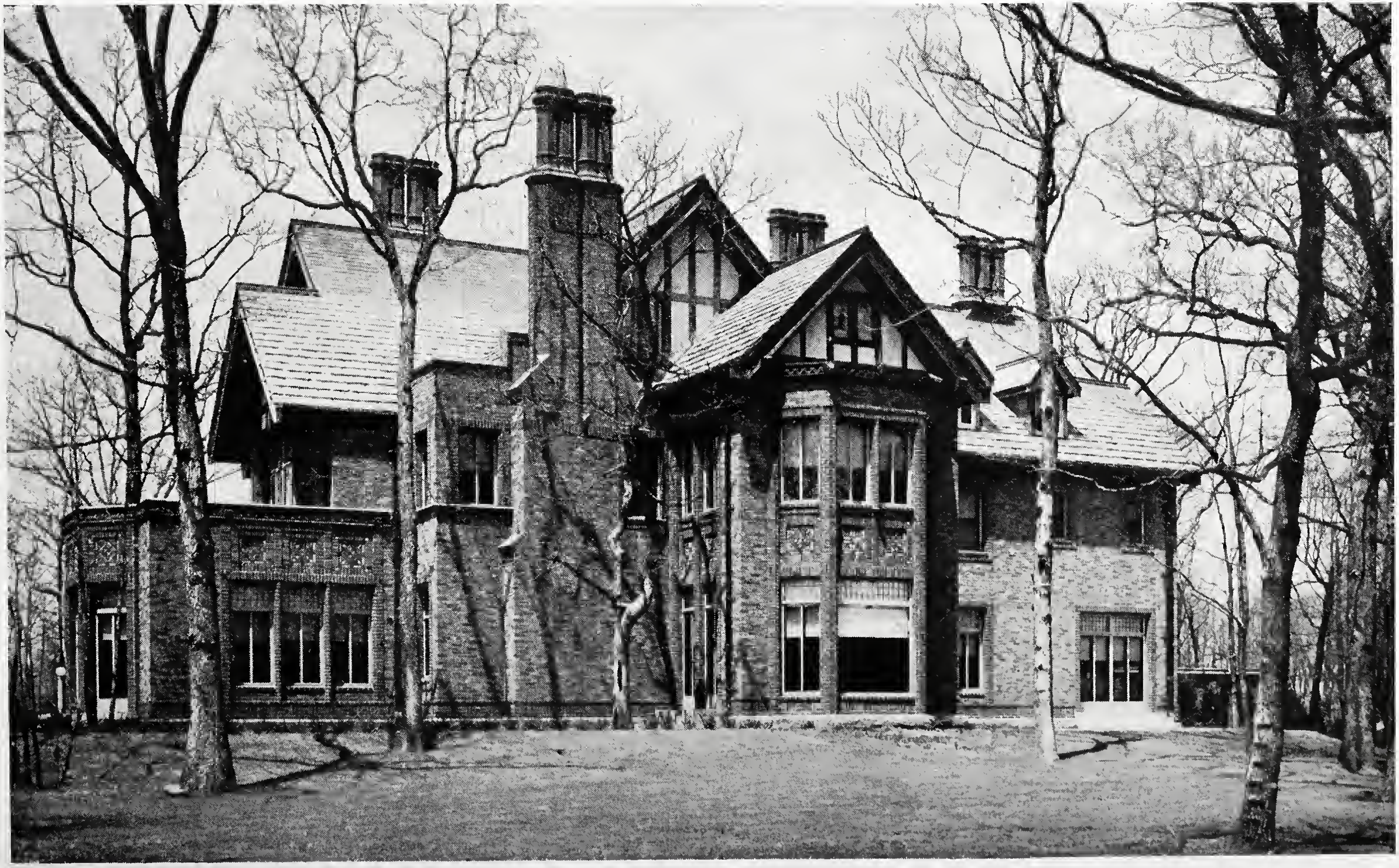

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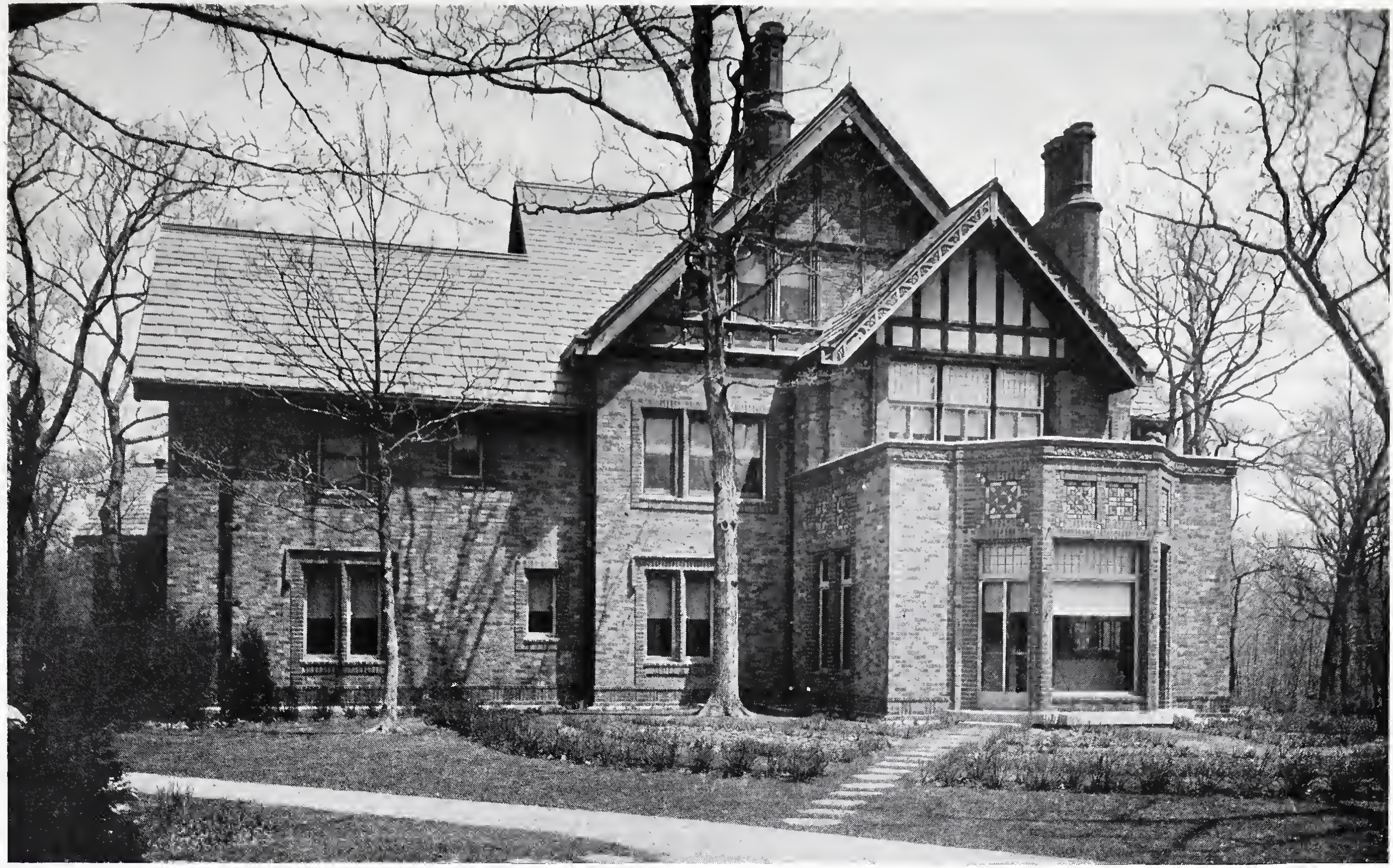

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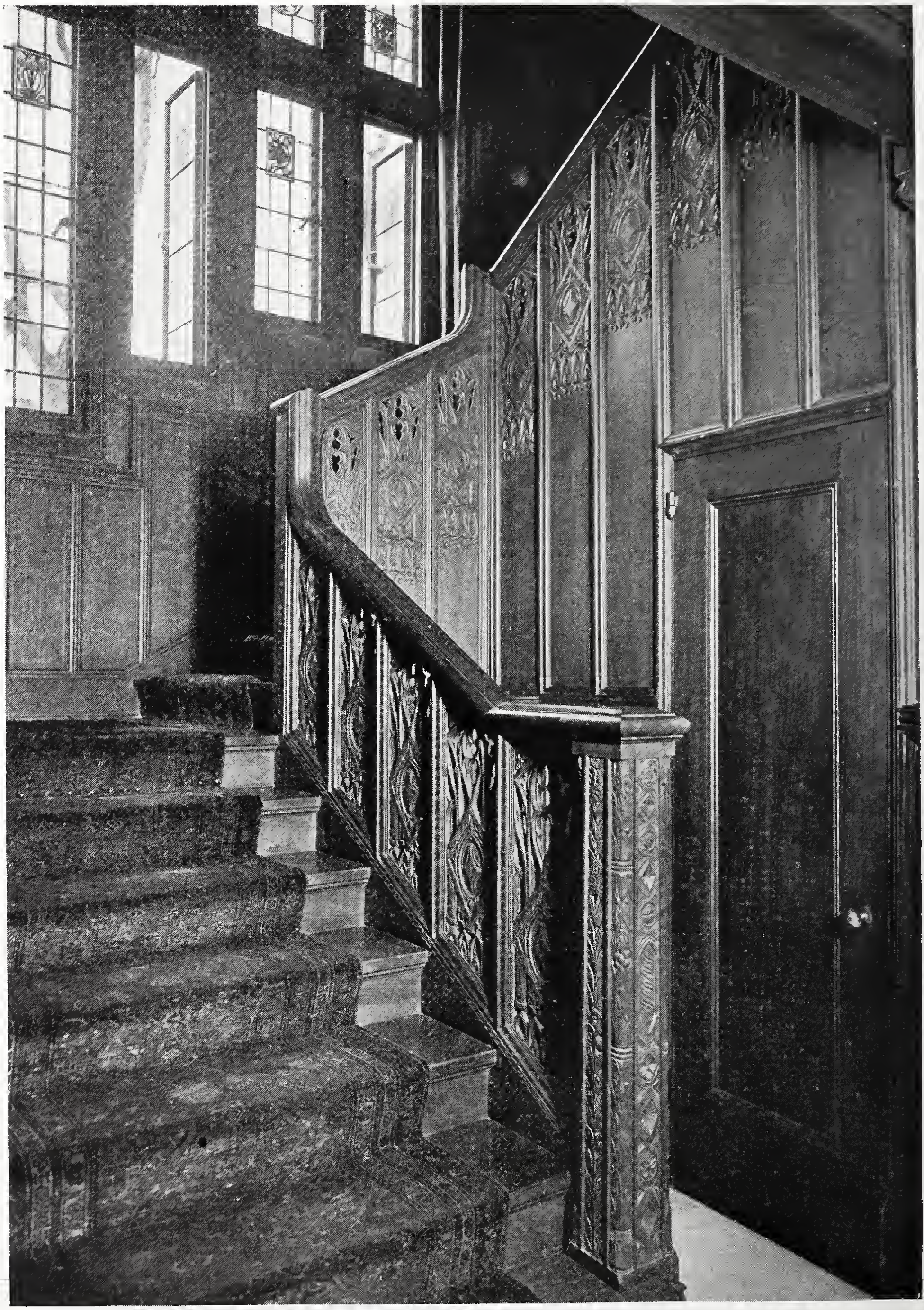

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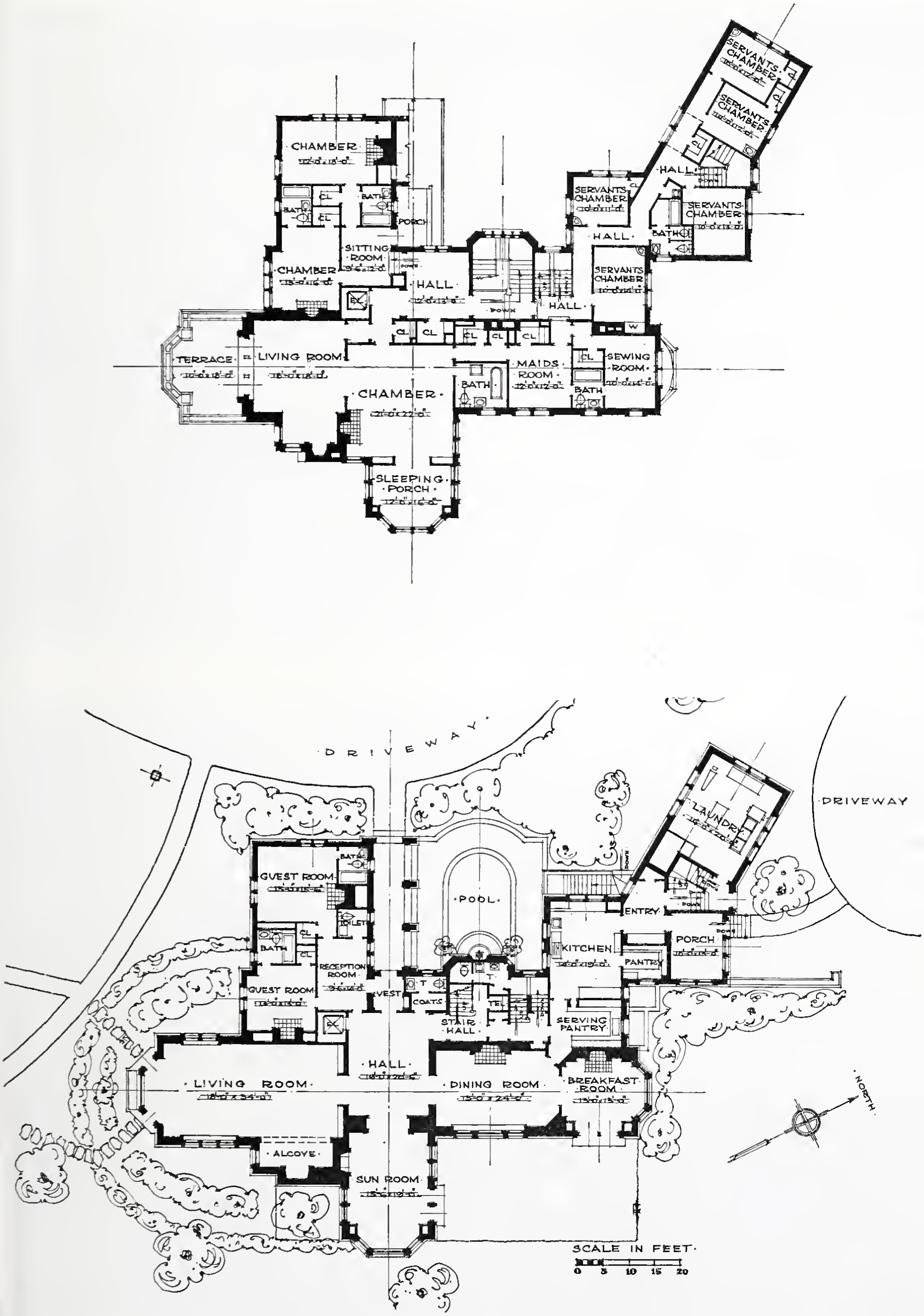

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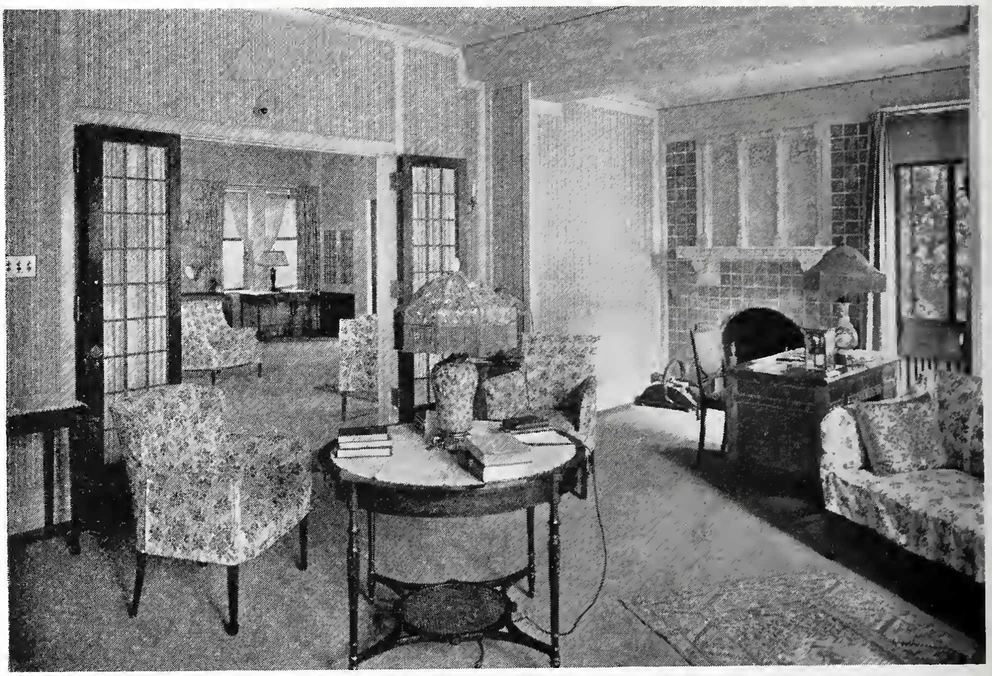

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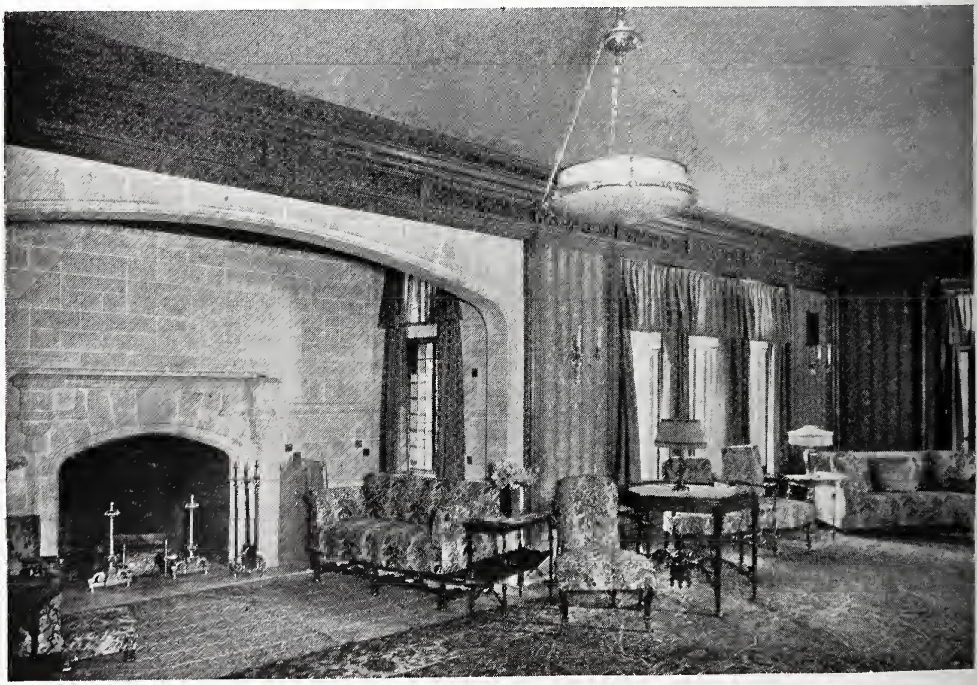

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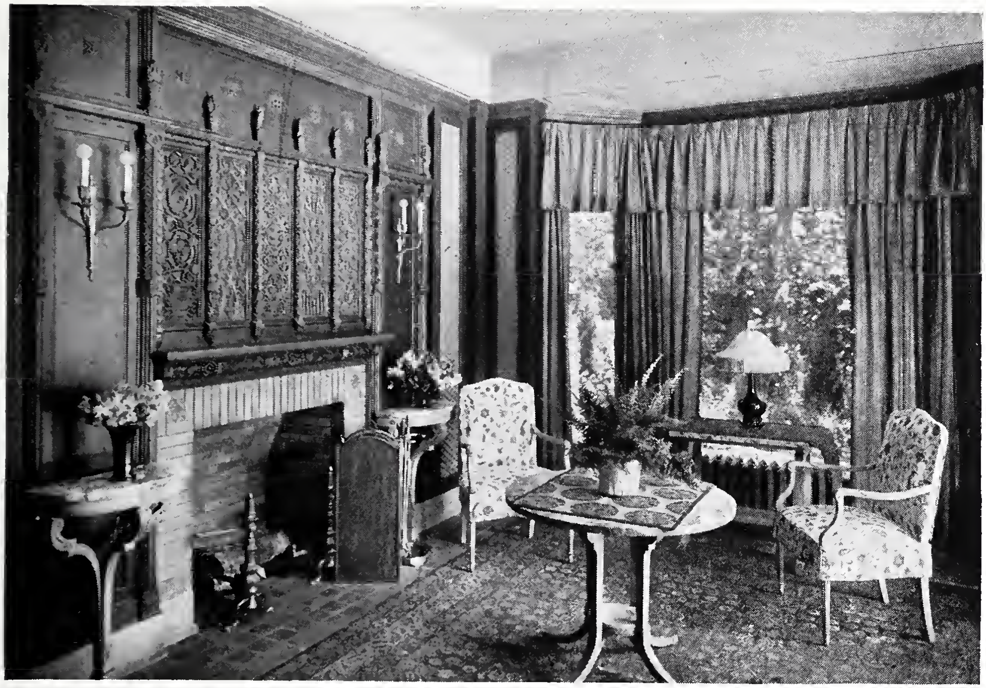

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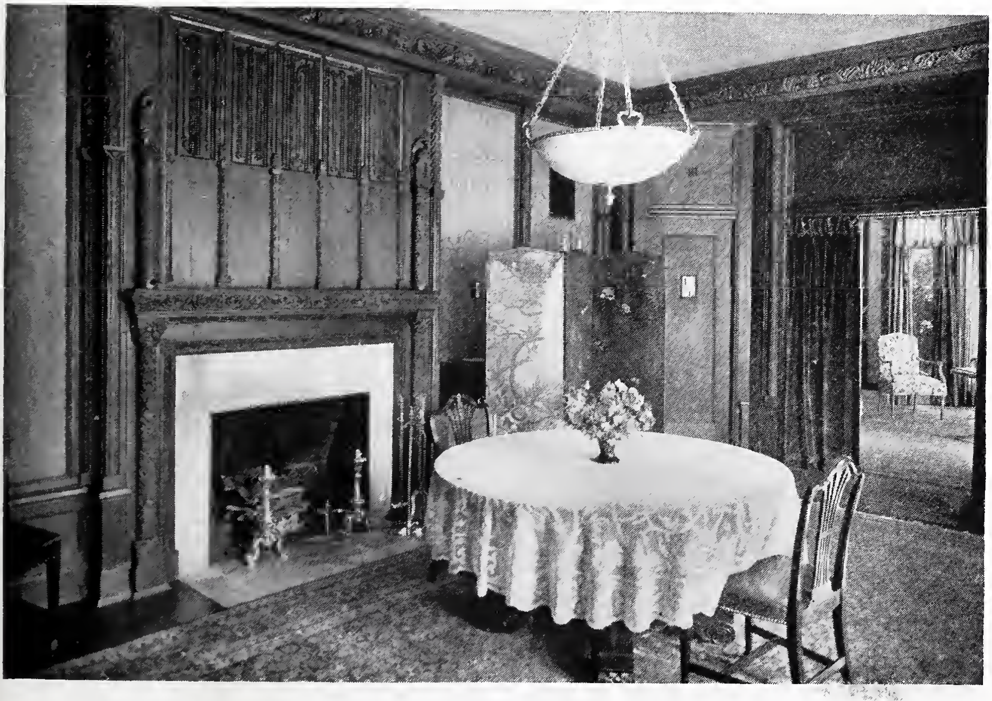

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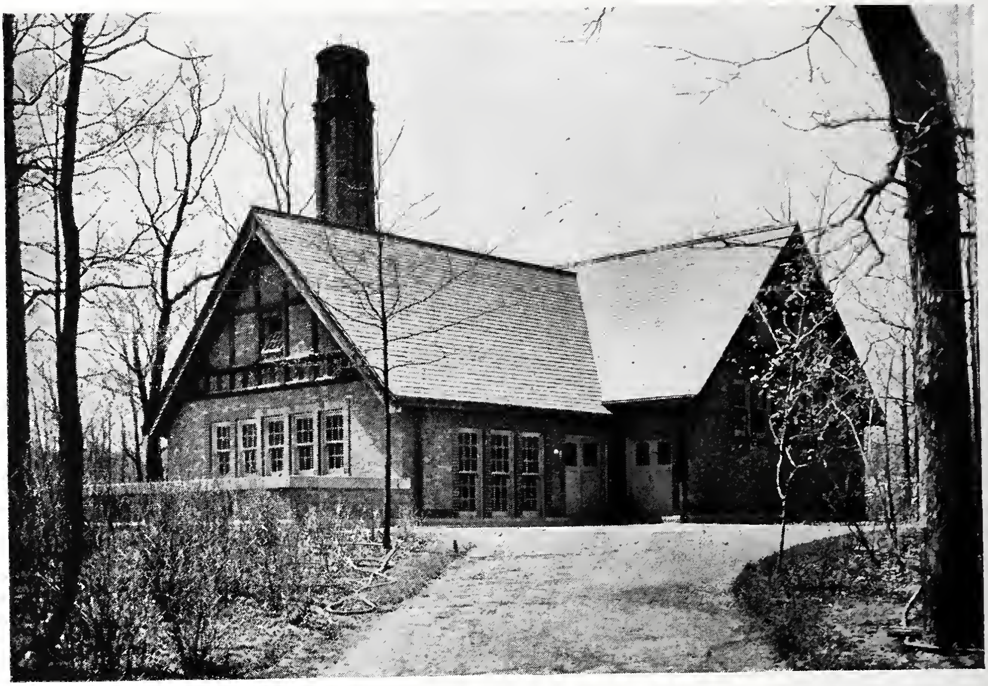

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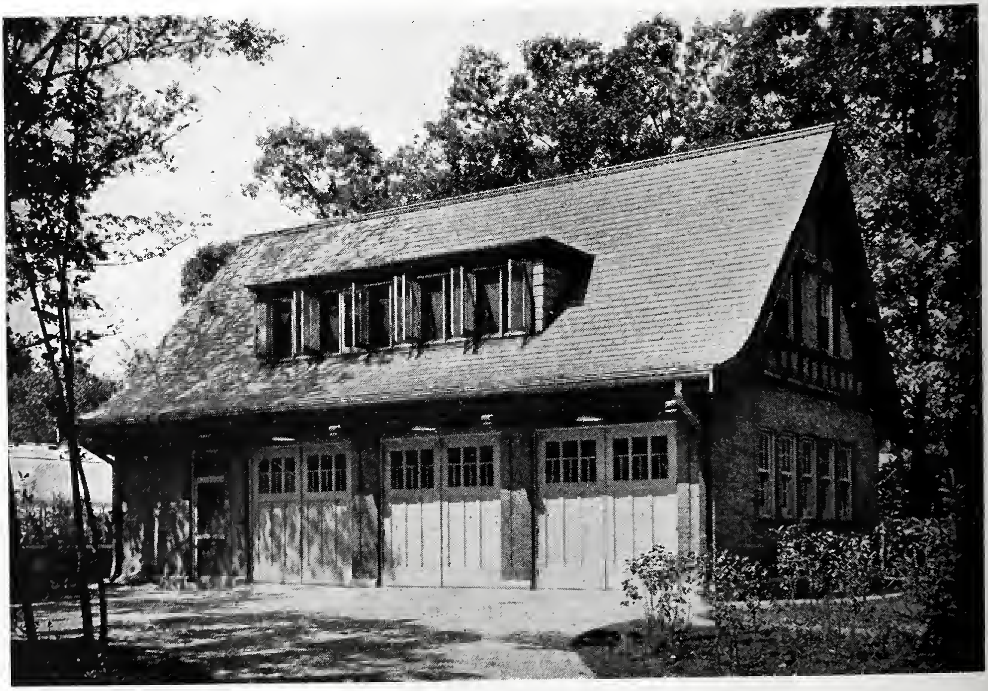

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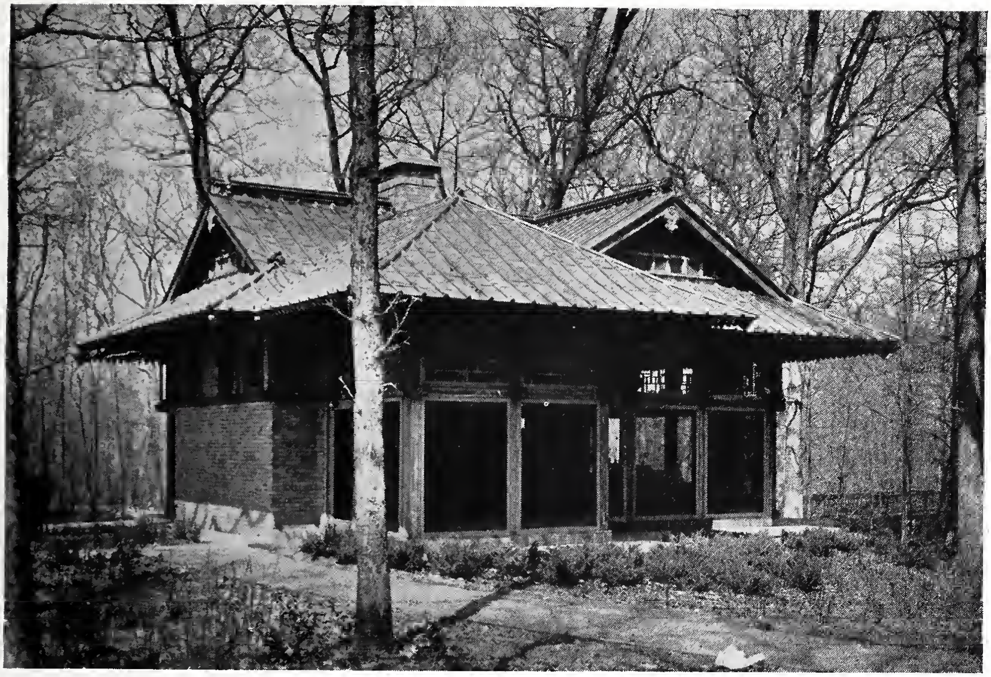

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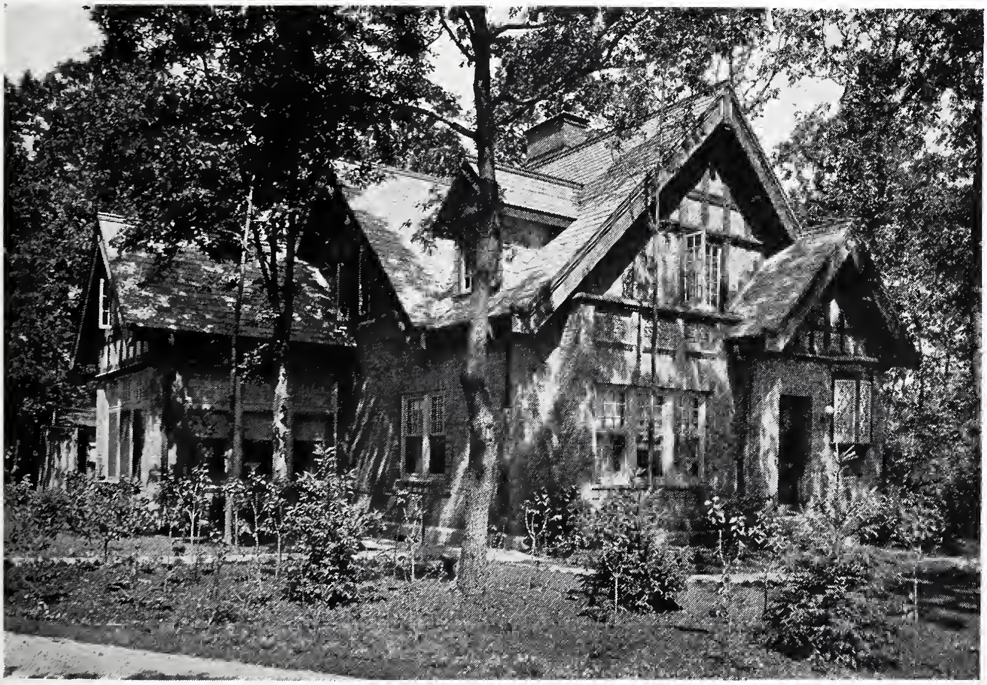

GARDENER'S COTTAGE—ESTATE OF MRS. CYRUS H. McCORMICK, LAKE FOREST, ILL.
Perkins, Fellows & Hamilton, Architects.

all the walls of the house and all the inside partitions. The bricks are of many shapes and very rough in surface. The second story window sills and water-tables and the flower boxes around the sun porch are of terra cotta of rough surface to match the bricks. There are many very finely sculptured gargoyles and other projections made to match the bricks, the details of which are not sufficiently prominent to be seen in the photographs. The eaves are provided with hanging gutters of copper. The gables are finished with barge boards having much interesting detail, of carved cypress with a dark stain. The roof is slated. The barge boards and the timber work of the gables have no connection with the interior of the house, an arrangement which precludes any possible communication of fire.

The view of the garden front from the south shows the windows and doors of the principal rooms of the first story giving upon the lawn; the low flat terrace is only one step above the graded ground. The entrance hall and the sun porch can be thrown open to the terrace by three doors in each. The effect of the exterior is one of quiet but harmonious color in contrast with the green and brown of the foliage which surrounds the house everywhere.

II.

In the McCormick house, at Lake Forest, is found a charming expression of the predilections in architectural design of the firm of Perkins, Fellows and Hamilton; a strong leaning toward Gothic motives in details, without any disposition to produce an out-and-out Gothic building. In all of its construction the most modern and best tried system of building has been used. Nothing in it is employed as Gothic buildings were built, not even the early Elizabethan manor houses, which it most resembles, but from which no details of decoration have been copied. It is built of wire-cut brick and much of the exterior decoration is with brick panels laid in the mosaic manner, and with terra cotta consistently modeled.

The entire interior of the first story is trimmed with French walnut. The woodwork is carefully detailed and is extensively carved. The ornament was detailed by the architects, and from these details full sized plaster casts for the carvers were made by the sculptor, Emil Zeitler.

The great merit of the McCormick house is its expression of domesticity, both within and without. There is nothing grandiose about it; nothing to impress you with the idea that it was built regardless of cost. But nothing has been omitted that could make it convenient and comfortable, even to the point of providing it with filtered air, both in winter and summer, at any temperature and degree of moisture.

Reverence for the beauty of the forest which surrounds the house was such that before anything else was done all the trees that were to remain were platted, and they had a controlling influence on the position of the house and the arrangement of its various parts. Thus it was owing to the trees that the kitchen extension was thrown out on an angle. The house cannot be seen from any public road, and is approached by two private roads through the woods from different directions. The estate contains several subsidiary buildings, including a tea house, a garage, a gardener's cottage, and a power house. The tea house is built in accordance with Chinese detail and construction. There is also an evidence of Chinese influence in the sun room of the main house, but they are still original in design and not copies. The gardener's cottage serves as a gate lodge at one of the entrances.

THE ART OF THE MIDDLE AGES

BY ARTHUR KINGSLEY PORTER

PART II

ANOTHER indication of the intellectual calibre of the Middle Ages, of their passion for learning, is to be found in the representations of the Liberal Arts in iconography. These seven disciplines — Grammar, Dialectic, Rhetoric, Arithmetic, Geometry, Music and Astronomy — were merely the subjects included in the curriculum of the medieval universities. Few graduates of American colleges would be inclined to set up a statue to Latin, Greek or Trigonometry. And yet this was precisely what the Middle Ages did, and did repeatedly. For there is hardly a cathedral or an important building of the period that does not, or did not, contain somewhere a representation of the disciplines.

With the seven Liberal Arts was generally associated the figure of Philosophy. In the medieval conception, Philosophy included infinitely more than religion. It was the love of learning in the deepest sense of the word, and this learning included naturally the study of that eschatology which was so vital and living in the thirteenth century. To the medieval mind, Philosophy was at once the end and the consummation of all learning. It was through knowledge of the tangible that man rose to grasp the intangible. His finest mental endeavor, the best training, were necessary to fit him for the contemplation of the divine. Accordingly, Philosophy is always represented as the queen of the other arts. In the Ivrea mosaic she is seated in the centre — the position of honor — and wears a crown. This medieval conception of religion differs significantly from that of the present day. Instead of lifting man up to appreciate an intellectual religion, we have debased religion to bring it down to the level of the meanest understanding.

In the Ivrea mosaic it is also notable that Dialectic occupies the second most important position to the left of Philosophy (for in northern Italy, the usual law of hierarchical precedence is often reversed, so that left, instead of right, is the side of honor). Dialectic is not taught in our American universities, and for an excellent reason. There are probably today very few students capable of studying such a course, and it is certain that there are no professors who could teach them. Our nearest substitute is Logic; but an inspection of a medieval textbook on Dialectic will suffice to show how infinitely more subtle, difficult and intellectual was the medieval subject. It is very significant that in the Ivrea mosaic the highest place should be given to Philosophy and Dialectic. The two great characteristics of the Middle Ages that we find reflected in all medieval thought and in all medieval art are the love of Philosophy and the love of Logic. It will be well to note how these passions are expressed in the Gothic cathedral — that consummate product of the medieval genius, for whose perfection the philosopher collaborated with the sculptor and the glass-painter, the dialectician with the architect.

The logical structure of the Gothic church has long been recognized. Every stone follows as a dialectic necessity. The foundations, with the buttress spurs, proclaim the rib-vault of the soaring nave. Given the buttresses, the design of the entire church is in a measure determined. Contrast with this logic of the Gothic construction the dome of St. Peter's at Rome, where (as Professor Moore has shown) we see buttresses formed of coupled columns vigorously applied to the drum where there is no thrust, and where we see ribs appliquéd on the surface of the cupola itself in such a manner that, far from gathering

THE DOME OF ST. PETER'S, ROME.

or relieving the structural strain, they merely increase it by so much added weight.

In the Gothic church the ground plan announces that the weight of the structure is carried on a skeleton frame; that the wall surface has been removed and replaced by glass, adding little extra weight to the points of support and requiring but a thin screen of masonry beneath. The section of the piers is determined by the size of the archivolts and of the ribs. The size of the buttresses even gives the height of the church. For the medieval masons did not waste stone. They experimented until they discovered how much was necessary to support the weight of the vaults; and they would have considered it a violation of that strict principle of logic, to which they were so bound, to employ more than was needed. If the plan of a modern building, say of the Boston Public Library, be compared with that of Amiens, it will be seen what the study of logic did for medieval art. From the plan of the modern edifice, it would be impossible to determine what system of roofing was to be employed, what were the dispositions of the interior, how many stories there were to be, where the windows were to be placed, or even the purpose of the edifice. The medieval building shows a strictly unified conception growing out of a mind trained by the practice of dialectic. The modern structure shows the aimless rambling of an untutored intellect. Yet planning is considered the forte of present-day architects.

The central fact, the postulate of a Gothic church, is the rib-vault. As a necessary conclusion follows, not only the peculiar type of plan, but the entire edifice with its forests of columns and pinnacles, its varied and rich ornament. From the vault were derived by a logical necessity those pointed arches which lead us, as Suger remarked in the twelfth century, into a region which, if not heaven, is neither yet entirely of this world. From the rib-vault followed the long vertical lines of the system, shooting upward like sky-rockets, carrying the eye and the emotions toward the serenity of the ether. From the rib-vault came the blazing windows of stained glass, filled with harmonies of purple and red and blue. From the rib-vault came the tracery of ever-varied design, vining the windows and even the arches. From the rib-vault came the buttresses, which give strong, powerful lines to the exterior design and introduce an ever-changing play of light and shadow. From the rib-vault came the flying buttresses with their rugged power and grandeur, Alpine in majesty. From the rib-vault, in short, came the entire Gothic cathedral; and there was nothing adventitious about this development. Step by step the evolution was accomplished — necessarily, logically, dialectically. Given the rib-vault, everything else followed because it was logical that it should follow. It was through the training in dialectic, in reasonableness, in rationalness, that the Middle Ages produced Gothic architecture.

This spirit of logic did not stop with the main lines of the edifice; it was carried into the most minute details. The gargoyles, of such charming decorative effect that they have been frequently copied in modern buildings in a perfectly meaningless way, were evolved in the Gothic structure for a definite and specific end; that is, to throw the water of the gutters far from the walls, so that it might not corrode the stone. The pinnacles which crowned the buttresses, and which modern architects (at St. Patrick's in New York, for instance) have reproduced for purely decorative reasons, were invented by the Gothic builders as a means of stiffening the outer buttresses by the addition of extra weight. Even the moldings, far from being purely ornamental, were so profiled as to prevent the water from trickling down the exterior walls. A Gothic capital is a very different thing from a classical capital. The architrave that rests on the latter would be quite as secure if placed directly on the shaft. The Gothic builders, however, gave the capital a structural function, which was that of adjusting a larger load to a more slender support. If we remove the capital the entire building comes crashing about our heads. This feeling for logic and unity led the Gothic architects of the best period strictly to subordinate all detail to the demands of architecture. The sculptures, far from disturbing, are an integral and essential part of the architectural composition. The figures are intrinsically beautiful and full of content. Indeed, in such a work as the western portal of Chartres, the Gothic artist produced sculpture, which, considered for itself alone, is unexcelled, I do not hesitate to say, by any ever executed by the hand of man. These statues combine the "singing line" of Botticelli, the tenderness of the Sienese, with a certain sincerity that is purely Gothic. Yet such beauty and significance are never attained at the expense of the repose of the entire edifice. In the sculpture, as in the glass, the Gothic artist expressed ideas, ideas so big that they are not infrequently beyond the grasp of us degenerates of the twentieth century; but, nevertheless, he has never for an instant sacrificed to his detail the unity of the building as a whole. A modern artist, having infinitely less to express, would still have been unable to say it without ruining the architecture. The medieval artist, on the other hand, contrived to give to his glass and to his sculpture just that decorative character which was required to lend the past perfection to the Gothic building.

Although Logic was the favorite art of the Middle Ages, it was still only the handmaiden to the super-art, Philosophy. It was in the service of Philosophy that the cathedral was primarily built; and it is of Philosophy that it is primarily an expression.

This philosophical content was conveyed largely by means of symbolism. It is necessary to draw a sharp distinction between allegory and symbolism. By allegory I mean the use of figures which in themselves have no reality, but are merely personifications of abstractions. By symbolism, on the other hand, I mean that infinitely more subtle and intellectual system by which figures that in themselves have a perfectly definite and tangible reality still are made to shadow forth or suggest some other idea. Allegory of the most bald and obvious kind is the plague of modern art. Everywhere, for example, we see dry and uninspired figures of Electricity, Progress, Autumn, Industry, and the like. Symbolism, on the other hand, we find in the plays of Ibsen; where a character in the drama is perfectly real and logical and self-consistent in itself, but also suggests to our minds another reality. Now, medieval philosophy is expressed in the cathedral through a peculiarly subtle system of symbolism. Allegory is rarely used. The example of the Liberal Arts, cited above, is one of the few I recollect, and even that is by a variety of expedients given a subtlety and intellectual character quite at variance with modern allegorical conceptions.

It was the profound conviction of the Middle Ages that the Bible was a book of double meaning; that, in addition to the actualities narrated, each event foreshadowed or reflected another greater event connected with the life and passion of Christ.* This same system was applied not only to the Bible, but to the entire visible and material universe. Thus, to the medieval mind, reality was but a symbol of unreality; matter but a reflection of the immaterial. Our earth became only a shadow of heaven. Everywhere in the things and objects about us God had implanted the image of eternal truth. It is a thought of singular beauty that grips one the more the longer one dwells on it. But the medieval philosophers did not stop there. They were tempted to read in this book a double meaning and to interpret its symbolism and significance. Studying nature with the aid of the Bible and their own poetic imagination, the medieval sages arrived at results strange but hauntingly beautiful. By their musing each least object in the world was vested with meaning. Profound mysteries were concealed in every flower, in every tree, in every cloud that chanced to float across the sky.

Especially was this mystic interpreta-

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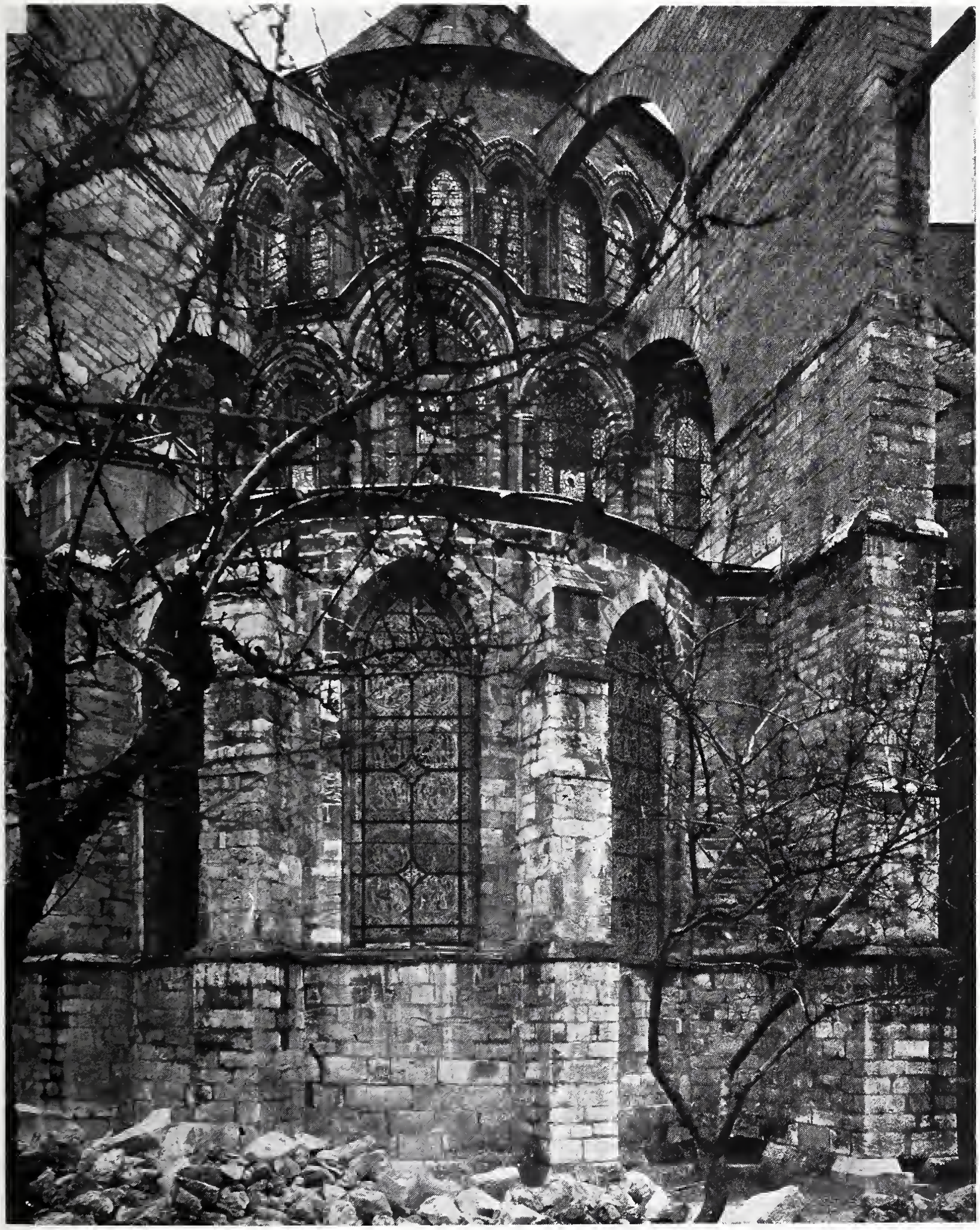
*This aspect of medieval art has been made comprehensible to the modern age by Emil Mâle in his immortal work—I almost wrote poem—*L'Art Religieux du XIII^{e} Siècle en France*, a book now happily available also in an English translation.

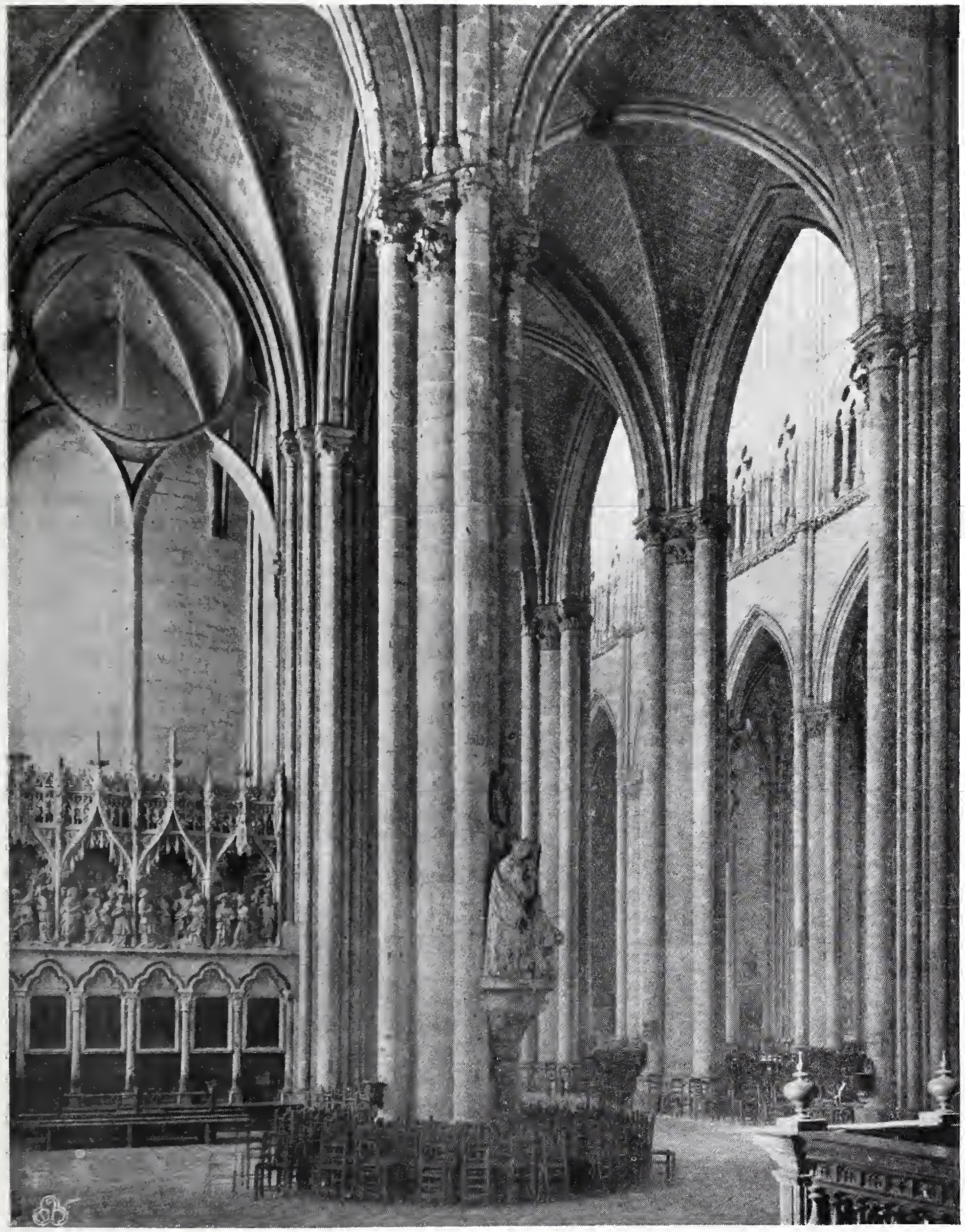


CHEVET OF ST.-REMI, REIMS.

tion applied to the most profound of books, the Bible. If God had implanted symbolism in every form of the material world, how much more must He have imparted it to His revelation, to the book in which was written all that man need know for his enlightenment and salvation? And so, for the Middle Ages, the Bible became the mystery of mysteries. In every word lurked a hidden meaning; in every phrase a double significance. And this mystical interpretation was carried over into the imagery of the cathedral. Thus when we see represented in the stained glass or in the sculpture some personage or scene from the Old Testament, we may be very sure the artist intended to suggest to our minds also another idea of which this scene was but the symbol. When on a capital of the cathedral of Verona we see Jonah vomited forth by the whale, we are to think of Christ who descended into Limbo and on the third day arose from the dead. When we see Melchisedech, we must think of another Priest and another King who offered bread and wine to His disciples. When we see Adam, we must recall that Christ is the new Adam, who redeemed the world as the first Adam had lost it. When in the cathedral of Laon we see, in a superb stained-glass window, Gideon collecting upon his fleece extended on the earth the rain of heaven; the glass painter wishes to remind us that the Virgin was that fleece on which fell the dew from on high. When, in the scenes of the Crucifixion, we see Mary and John standing at either side of the cross, we are to think, not only of the Mother of God and the beloved Apostle, but of the Church, which, by means of the Crucifixion of Christ, supplanted the Synagogue. In the exquisite relief of the Deposition by Antelami, the figures of the Church and the Synagogue are actually introduced, like persons living and present at the scene. The Synagogue, with shattered lance, is pushed down into the dust by an archangel. The Church holds a chalice in her hand. In this relief there are introduced on either side of the cross also figures of the sun and moon, other symbols of the Church and the Synagogue. In Gothic representations of the Crucifixion, Mary and the Church are commonly identified, and the Virgin holds a chalice in which she catches the blood that flows from the side of Christ. In the prophet of Carpi, who holds his head in his hand, and whose features express so eloquently the strength and power of his prophetic vision — a vision of hope and ultimate salvation not untinged by a comprehension of the sadness and tragedy of the world — we are to see not only that Isaiah who had proclaimed *Ecce Virgo concipiet,* but we may recognize the features of the Apostle to the Gentiles. In a window of the cathedral of Chartres the four Evangelists are represented standing on the shoulders of the four major prophets. The glass-painter clearly wished to indicate that the Evangelists found their points of support in the prophets, but that they saw farther and more clearly. The medieval artists never wearied of placing in parallel the four Evangelists, the four rivers of Paradise and the four cardinal Virtues; and the twelve Apostles and twelve Prophets. In the archivolt of the lunette in the baptistery of Parma we see seated the twelve apostles, each bearing a medallion with the figure of a prophet.

One of the conceptions which most powerfully weighed upon the spirit of the Middle Ages was the mysterious property of numbers. The Greek philosophers had long meditated upon the subject, and Pythagoras had sought to find in numbers the explanation of the entire universe. The Middle Ages adopted the idea with passion. The great Isidore of Seville wrote a long treatise on the subject. Of all numbers the most mystic were four and three; their sum seven and their multiple twelve. Throughout the medieval cathedral, as throughout the medieval philosophy, these numbers and their mystic significance echo back and forth like a returning cadence in a piece of music.

In all medieval imagery the law of hierarchical precedence plays an important part. The centre is the place of honor; right has precedence over left, the upper over the lower. It is, there-

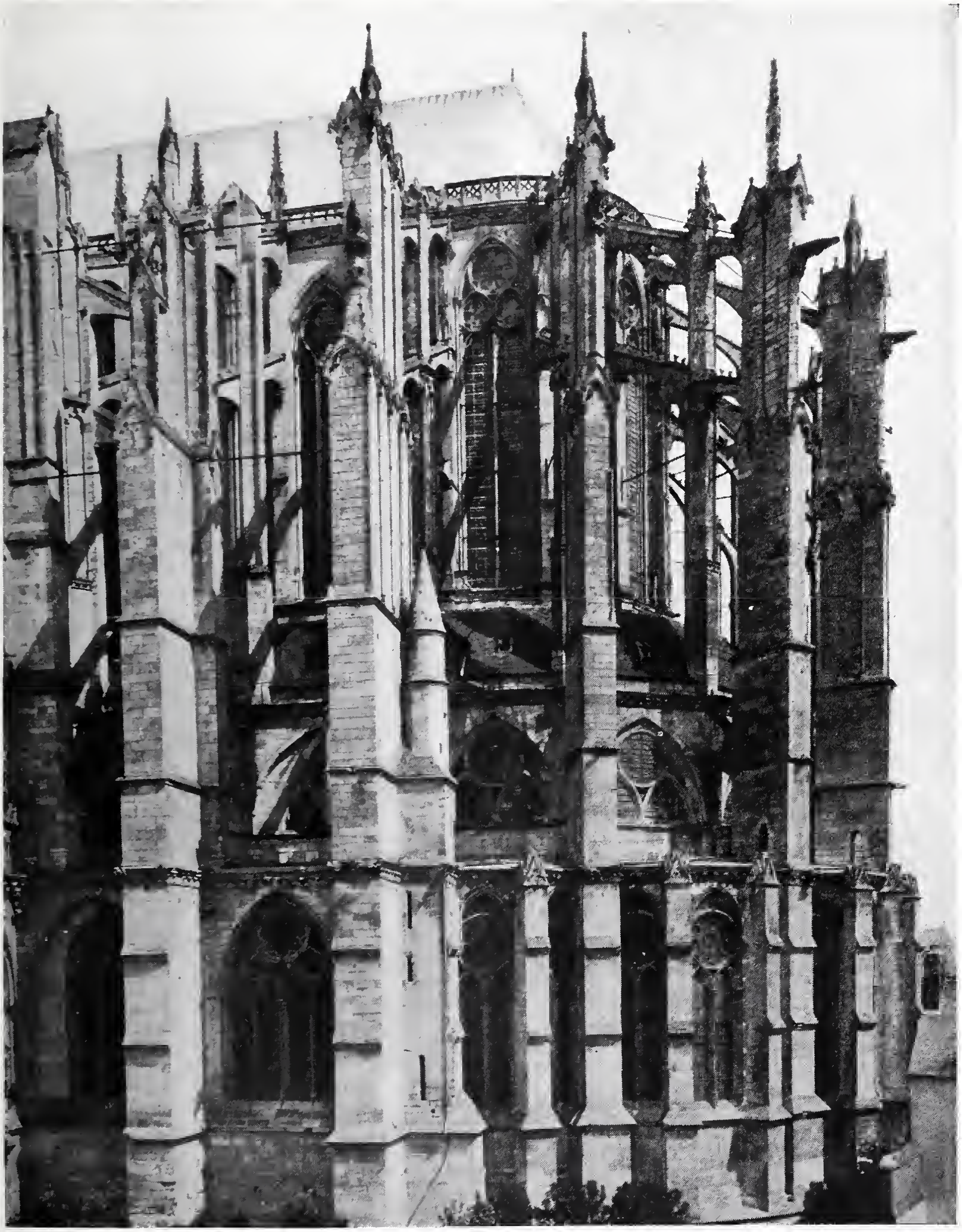


THE NAVE, SEEN FROM THE TRANSEPT, CATHEDRAL OF AMIENS.

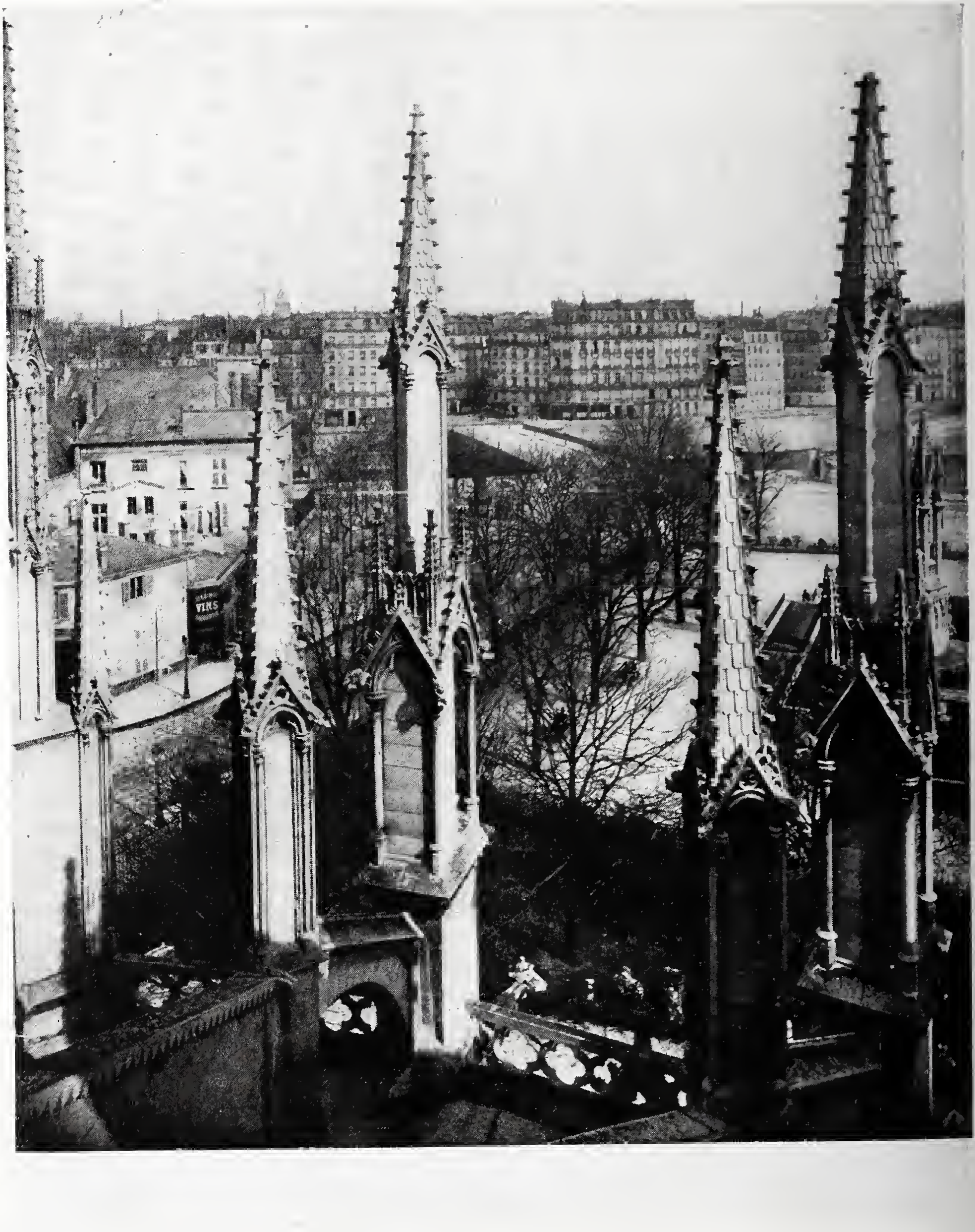
fore, never by chance that a particular subject is represented in a particular place in the cathedral. If the story of St. John is depicted in one window and the story of St. Peter in another, we may be certain that there is a definite reason why one is placed here and the other there.

The centre of the principal portal, the post of greatest honor, was generally given to the figure of the Redeemer. To illustrate the wealth of thought bestowed upon every detail in Gothic art let us study the two little animals which are placed under the feet of the Beau Dieu at Amiens. A careful examination will reveal that these figures, which at first sight might be taken to be purely decorative, are, in reality, the aspic and basilisk. Now, in the bestiaries—those strange, unnatural histories composed by the united imaginations of Antiquity and of the Middle Ages, and which combined a complete ignorance of scientific truth almost as profound as that displayed in some of the books on natural history until recently in use in our public schools, with a poetry such as only the Middle Age could have read into such a subject—there is a great deal about the aspic and the basilisk. The aspic is a kind of dragon that one can charm with songs, but who is on his guard against the charmers, and, when he hears them, places one ear against the ground and closes the other with his tail, so that he can hear nothing. Thus he escapes being charmed. The Middle Ages found no difficulty in understanding this strange animal. For them the aspic was the image of the sinner who shuts his ears to the words of life—that is, the Gospel. The basilisk, on the other hand, has such a nature that when he has passed the seventh year of his age he feels an egg grow in his stomach. Thereupon he is amazed at himself and suffers the greatest pain that a beast can suffer. The toad, another bestiary animal, has such a nature that he smells the egg which the basilisk carries, and as soon as it is laid he goes to cover it. The young basilisk hatches out with the head, neck and breast of a cock and the tail of a serpent. He then goes to live in a crack in a cistern. He is of such a nature that if a man sees him first, *he* dies; but if he see the man first, the *man* dies. He has, moreover, such a nature that he throws his venom and kills birds. He who wants to kill the basilisk must cover himself with a vessel of glass, for the beast throws his poison with his eyes, and if it strikes against the glass it rebounds on the beast himself and kills him. The basilisk is the symbol of the devil, and is the very one who tempted Adam and Eve, for which he was banished from Paradise into the cistern of Hell. The vessel of glass is the Virgin, in whose womb Christ enclosed himself. Therefore, when we see the Beau Dieu of Amiens standing upon the aspic and the basilisk, it is evident that we have represented in reality the triumph of Christ over Sin and Satan. If you will turn, not to your Revised Version, but to the Vulgate, you will find that the Psalmist says: "Thou shalt trample on the aspic and the basilisk, and the dragon and adder shalt thou cast under foot." Indeed, a close examination of the Amiens pillar will reveal the adder and dragon carved not far from the aspic and basilisk. The medieval artist has represented in this sculpture the profound dogma of human sin and redemption. It is with peculiar fittingness that this fundamental and primary conception of the Church is placed in the most important position of the cathedral. This is the meaning of the two little animals, one of the smallest of the myriad details with which the Gothic church is covered.

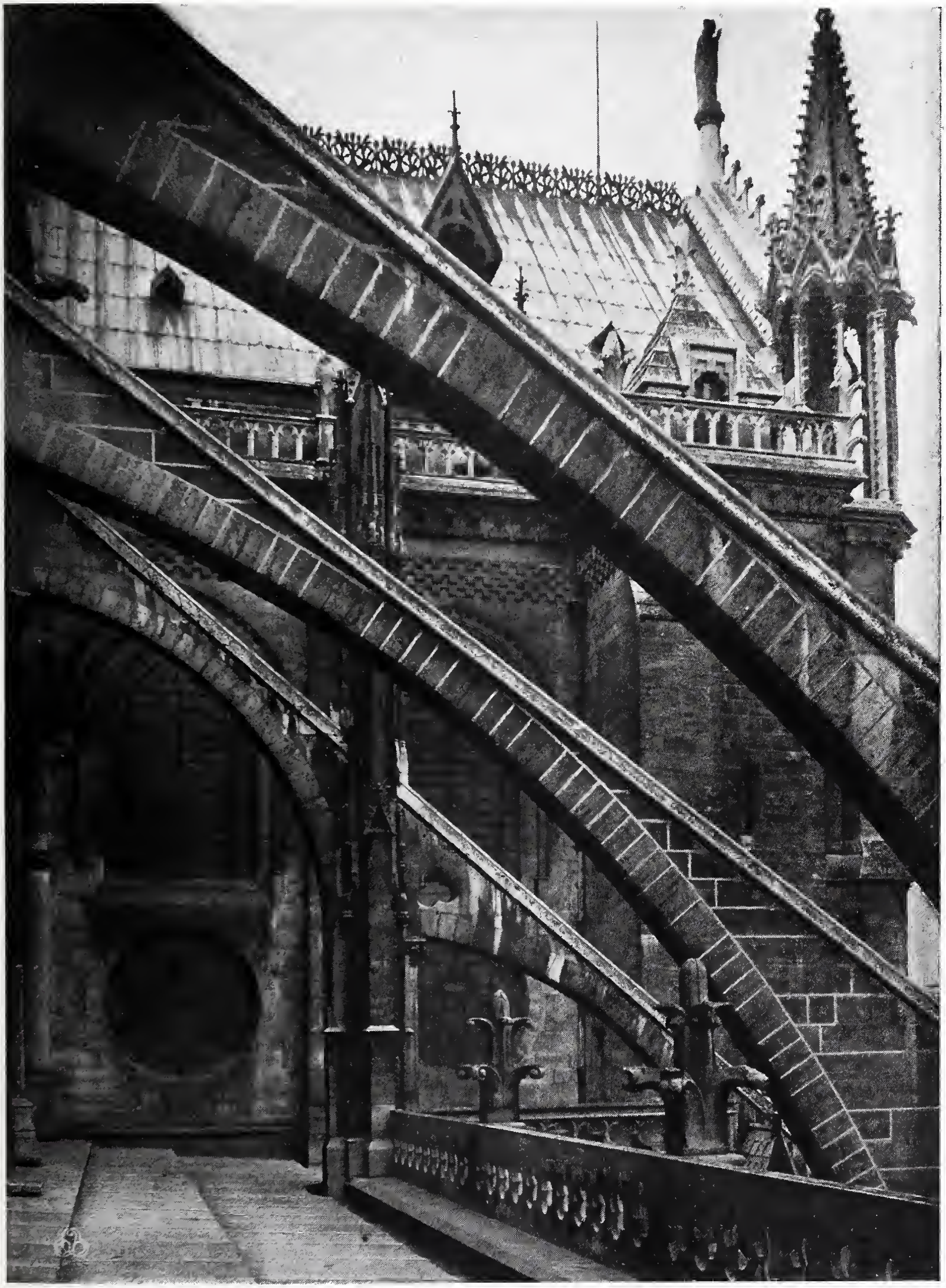
The same sense of propriety, the same sense of order and of unity pervades the iconography of the entire cathedral. M. Mâle has proved that the medieval church in its imagery is as essentially and as vitally unified as in its structure. The four great mirrors of Nature, of Science, of Morals and of History, into which Vincent de Beauvais divides his work upon human knowledge, and which in the medieval conception reflected the manifestations of the glory of God on earth, each finds in the cathedral imagery its appropriate, logical and fitting place. At Chartres, for example, on the north side (the region of darkness and cold)



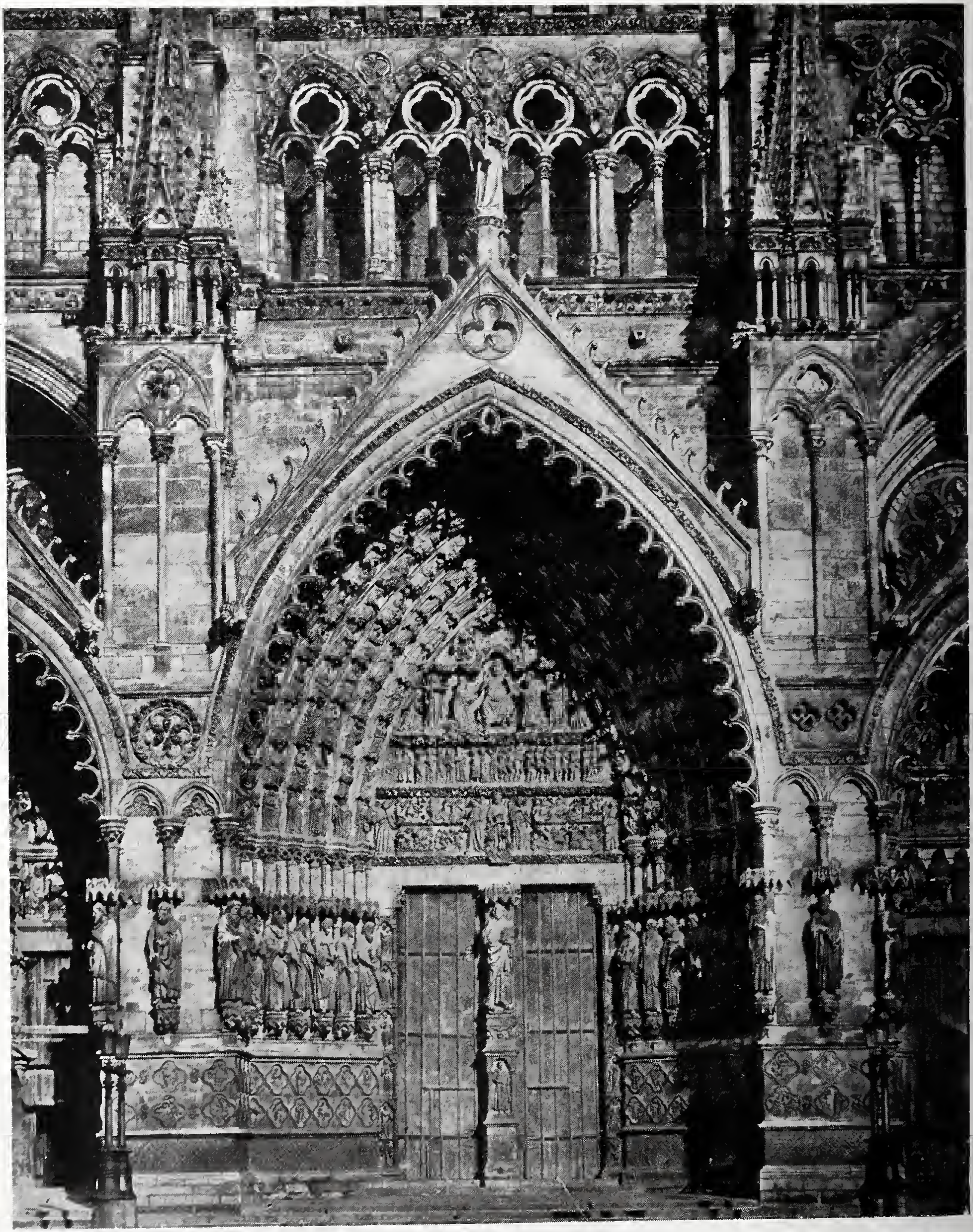
CHEVET OF THE CATHEDRAL OF BEAUVAIS.



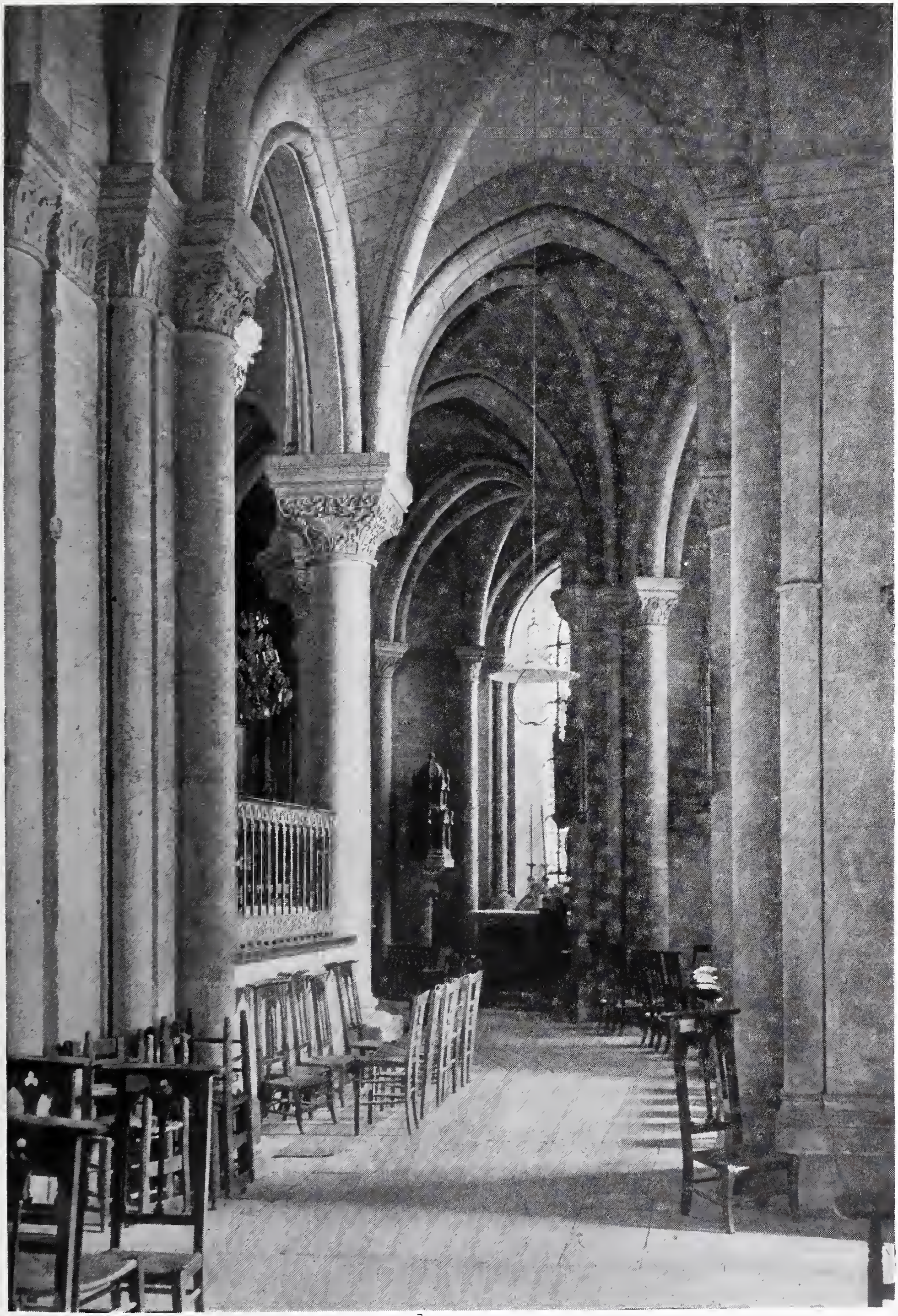
PINNACLES OF THE CHEVET, NOTRE-DAME, PARIS.



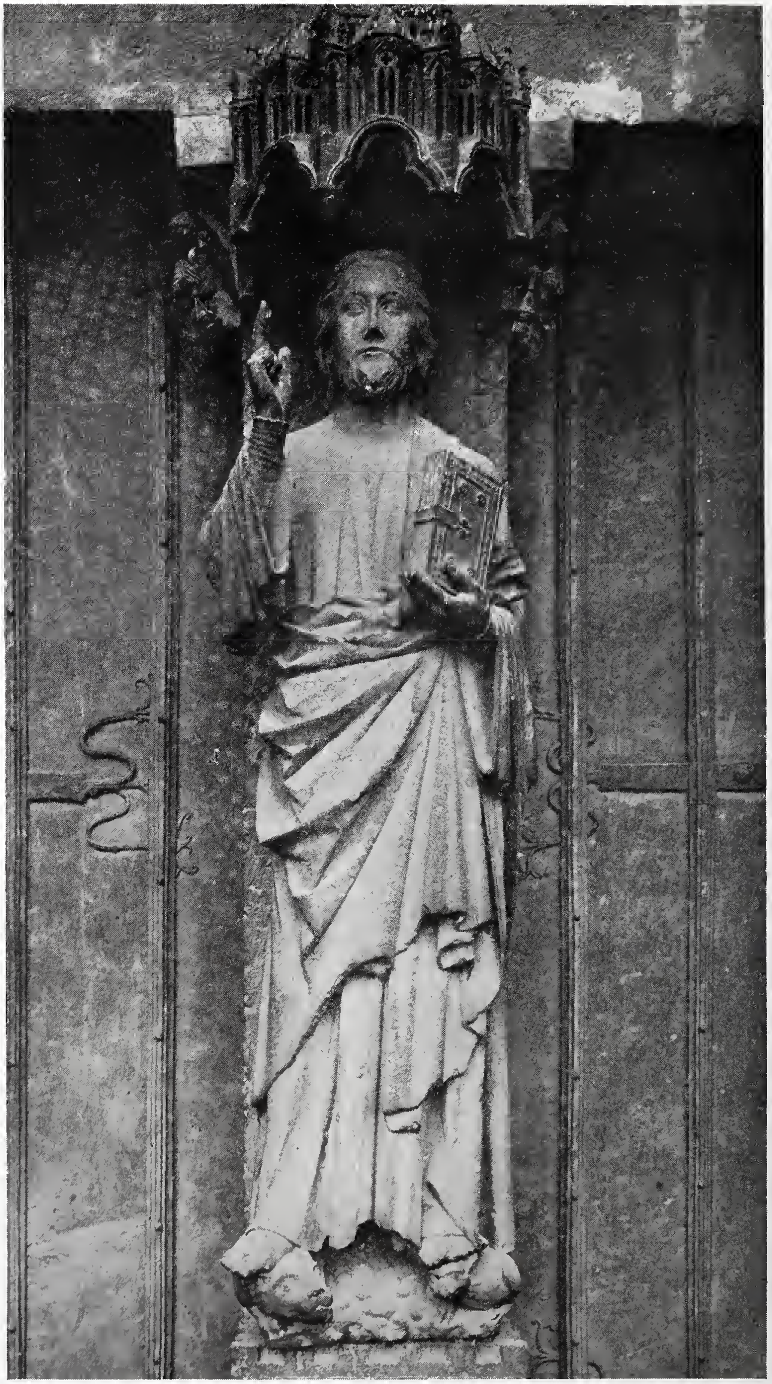
FLYING BUTTRESSES OF THE
CHOIR, NOTRE-DAME, PARIS.



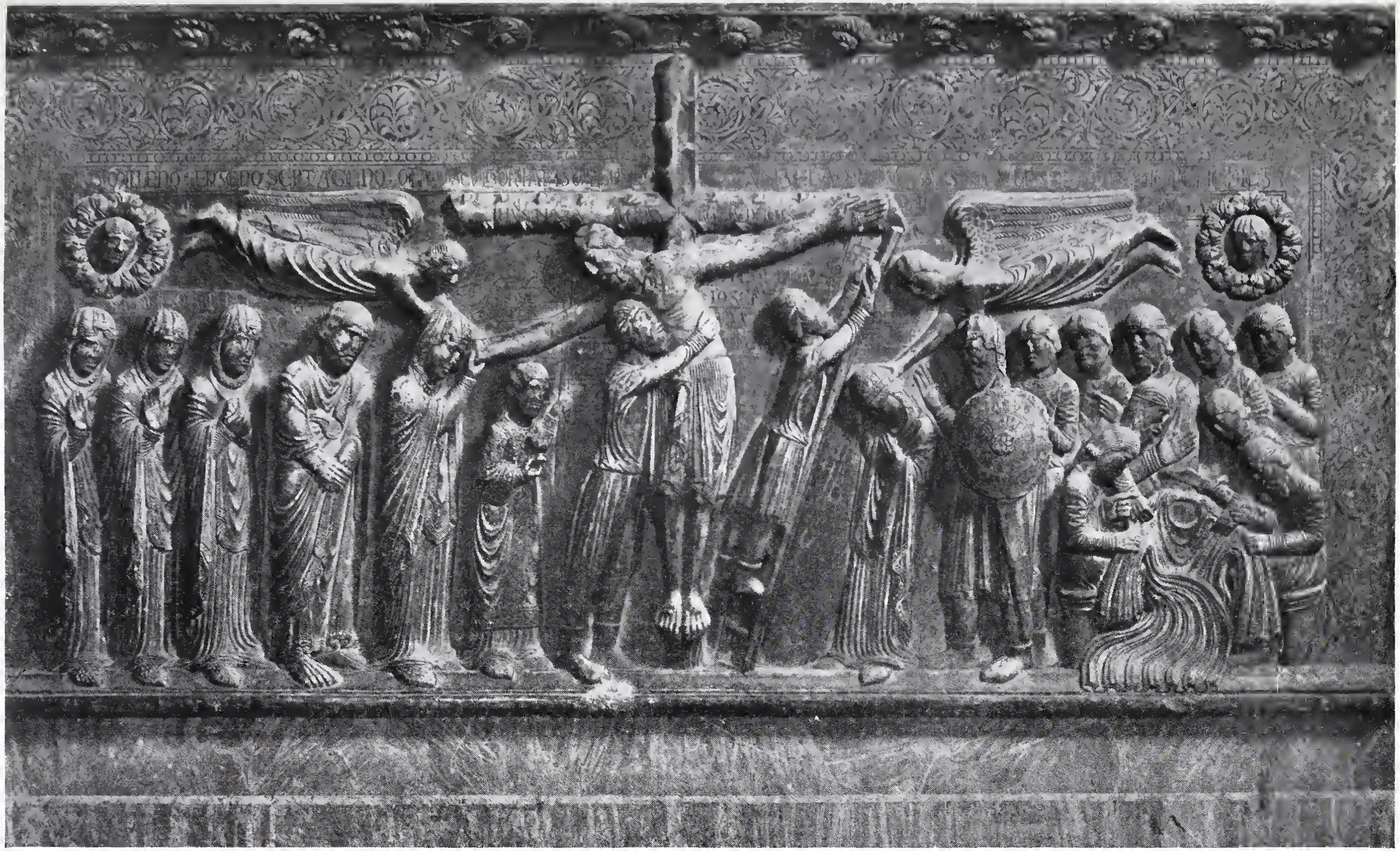
WESTERN PORTAL OF THE
CATHEDRAL OF AMIENS.



AMBULATORY OF THE
CATHEDRAL OF SENLIS.



BEAU DIEU, CATHEDRAL OF AMIENS.



DEPOSITION FROM THE CROSS (BY BENEDETTO,
MISCALLED ANTELAMI), CATHEDRAL OF PARMA.

were displayed subjects drawn from the Old Testament, from those ages which awaited the coming of the Sun of Christ. On the south (the region of sunshine and warmth) were told the solemn stories of the life of Christ and the Christian saints. Over the western portal was unrolled the dreadful drama of the Last Judgment, so placed that the last rays of the setting sun might illumine this terrible scene of the final evening of the world.

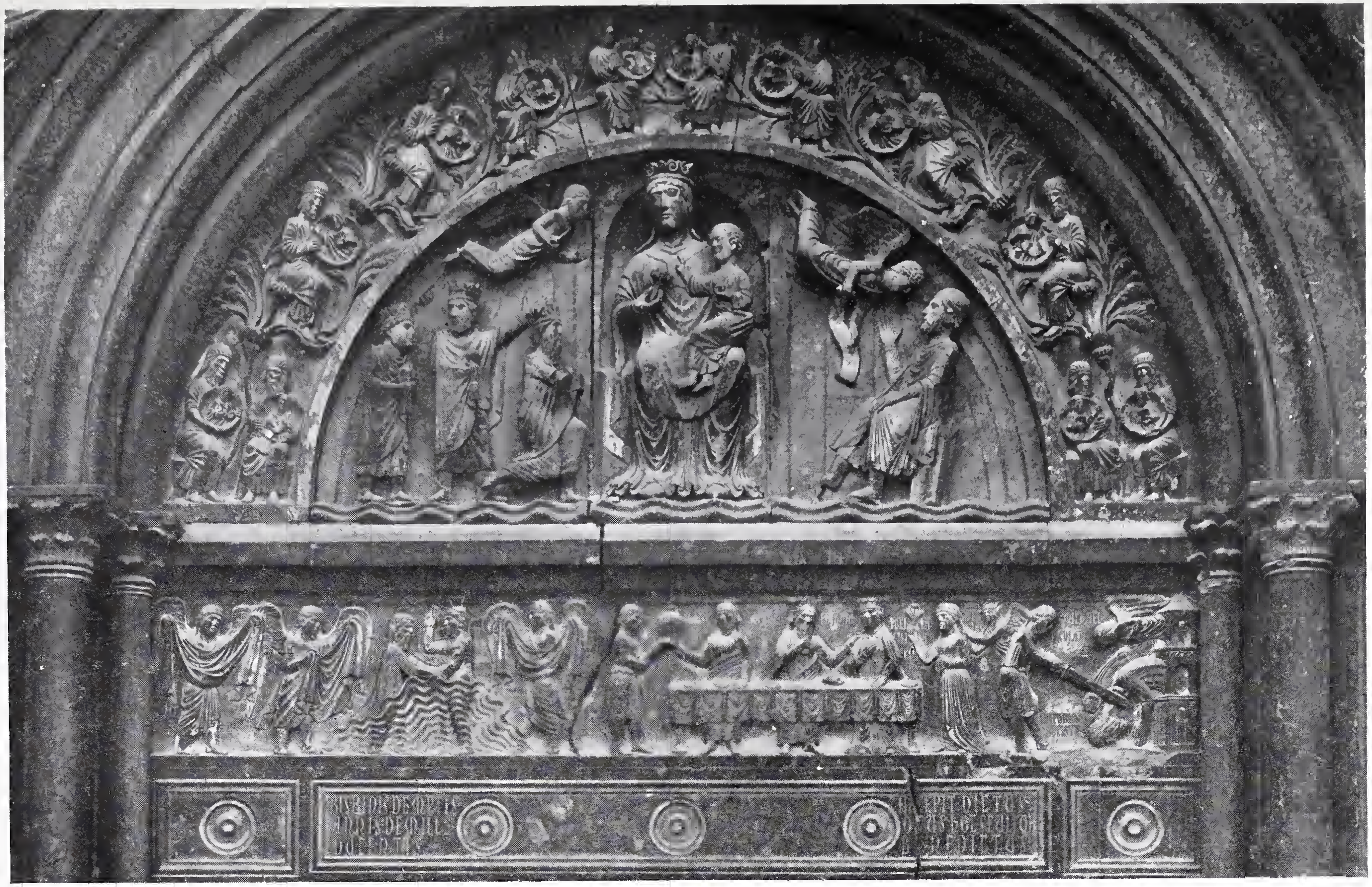
I am sensible how inadequate are these few lines to convey an impression of the beauty and poetry of medieval iconography. Happily M. Mâle's admirable study is within the reach of all. What I have said may be sufficient to indicate in some measure the type of symbolism used by the Gothic artists. It is through the imagery in Gothic architecture that Philosophy is made to sit crowned, a queen over all the arts, harmonizing and combining them into a mighty unity. It is through the imagery that Gothic architecture acquires its supreme intellectuality; that it becomes not only decorative, but illustrative.

As I use these two words "decorative" and "illustrative" in a special sense, it will be well to define the meaning I seek to convey by them. Mr. Berenson has already acclimated them to painting. By "decoration" I mean to indicate all the *intrinsic* merits of a work of art; all the intellectual qualities that make it in itself pleasing to us. These would include in painting and sculpture: form, color, line, movement; in architecture: proportion, scale, massing; in literature: style, the choice of words, verse; in music: harmony, rhythm, modulations. "Illustration" on the other hand indicates all the *extrinsic* merits of a work of art, those intellectual qualities that make it pleasing to us by outside suggestion. Character drawing is an example of illustration applicable to the three arts of painting, sculpture and literature. By means of the sculpture and glass, Gothic architecture became highly illustrative; it conveys to us ideas and pleasurable emotions quite outside of the material building itself.

I think there can be no doubt that an art depends far more than is commonly recognized upon its illustrative quality. Over-emphasis of decoration has been a disastrous mistake of the modern age. What one says matters far more than how one says it. The ability for expression, technique—in the last analysis decoration is hardly more—is indeed a necessary pre-requisite; but if art stops here, it has essentially failed. *Decoration is merely a means to the supreme end—illustration.* This is the whole gospel of art.

Modern criticism is beginning to perceive at last the value of illustration. Mr. Berenson after having seen importance only in decoration has now reversed his opinion. Knowledge of Oriental art has opened our eyes to the fact that the artist who sets himself illustration as his ultimate aim is alone capable of reaching the greatest heights. The decadence of modern art appears to be largely due to the abandonment of all ideals of illustration. Nothing contributes so largely to the feeling of depression caused by an academy exhibition as the fact that most of these painters, for all their technique, have nothing to express. It is only illustration that can lift art to the highest level.

That this statement be not misunderstood, I hasten to add that I attach to the word "illustration" an even broader meaning than that given it by Mr. Berenson. I should make it include not only the conveying of a concrete idea, but also the conveying of an emotion. It was this that Cézanne meant when he spoke of the *petite sensation* he tried to fix upon his canvas. Thus an andante of Beethoven or Brahms would be as completely illustrative as a piece of program music by Strauss or Debussy. An Asia Minor rug may have a strong illustrative element—the good ones in fact do, even when the forms are least realistic. Mr. Berenson would doubtless judge Giotto a very poor illustrator, because he is not successful in interpreting the finer and more subtle aspects of the subjects he depicts; I should call him a great illustrator, because he conveys to me a very definite *mood,* although not the same mood as that evoked by the legends of



LUNETTE OF THE PORTAL (BY BENEDETTO,
MISCALLED ANTELAMI), BAPTISTERY OF PARMA.

St. Francis or of Christ or of the Virgin which he paints.

Thus all architecture that is of significance is in a manner illustrative. Surely none conveys an emotion more powerfully than Gothic. But medieval art is illustrative also in the Berensonian sense. It unites the qualities of a Sassetta with those of a Giotto.

It is a curious though by no means incomprehensible fact that a race of men is capable of producing more finely artistic thought than any individual. Folk-art has almost invariably possessed greater vitality than the art of any individual. This is, perhaps, another direction in which the highly individualistic modern age has gone astray. It can hardly be doubted that the use of traditional material was a great source of strength to Homer and the tragic poets of Greece. Shakespeare drew his plots from what really was the equivalent of a folk tradition. The Renaissance painters found in subjects of a traditional character (although the conventions were already in precipitate decline) an inspiration which is lacking to our modern painters, free to paint what they will. Now of all legends none was so refined by passing through countless hands, none so full of life, none so imbued with intellectuality of the highest type as the religious legend of the Middle Ages. The world for twelve centuries had brought its best to the elaboration and perfection of the scholastic system. The straightforwardness and human sympathy of the people, the imagination of the poet, the deepest thought of the philosopher were there blended and combined. By comparison, the myths of the Hebrews seem crude; even those of Greece appear lacking in subtlety. It is the possession of this supreme legend that raises the *Divina Commedia* above all other epics. It is the possession of this supreme legend that places on the brow of Gothic art its highest intellectual crown.

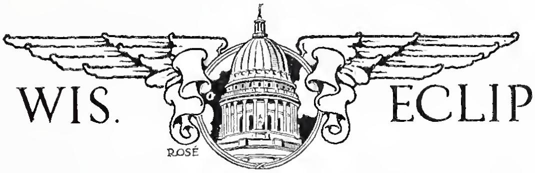
CARPI (MODENA), PROPHET OF AMBO.

·INDVSTRIAL· HOVSING·DEVELOPMENTS ·IN·AMERICA·

By LAWRENCE VEILLER

Secretary of the National Housing Association

I- BELOIT, WIS. ECLIPSE PARK



A Development by Geo. B. Post & Sons Architects & Town Planners

ONE of the reproaches often heard against the architectural profession has been that the average architect's ideal has been to build monumental buildings, great public structures or skyscraping office buildings or hotels, and that the better class architect has had little interest in the humble dwelling of the workingman. The result has been that the workingman has been left, as a rule, to the tender mercies of the speculative builder or the jigsaw catalogue.

It is especially interesting, therefore, to find a firm of architects, long established and of national reputation, after having achieved the splendid monument of the new Capitol of the State of Wisconsin, whose dome is indeed a glory, now turning their attention to the homes of the mechanics and workingmen in that same State.

It is perhaps an unconscious admission that no matter how gloriously the State's civic responsibilities may be symbolized by that soaring dome, its foundations rest upon the great mass of the plain people.

There are today in the United States, in round figures, some 230 improved housing developments. Some are good, some are bad; some are old, some are recent. Many are employers' enterprises built for their employees; others are so-called "model" housing schemes. There is not one of them, however, of which one could say to an employer wishing to do the right thing, "Copy that"; though in many of them there is much that is meritorious.

From the days of ill-fated Pullman to the present there have been many brave attempts at solving the problem of housing the workingman.

The old way was for the manufacturer who wanted to house his employees to go ahead and hire a local builder and build houses. As a rule, he consulted neither architect nor city planner nor housing expert. The result in many cases has been the "mill village," with its depressing rows of hideous barracks—usually with little or no architectural effect, often indeed with all the houses painted the same color and looking for all the world like a row of institution children.

But times have changed. With the war there has come a great shortage of labor supply—not only of skilled mechanics, but even of so-called "common labor"; and the problem of reducing labor turnover has become the problem of the moment. In casting about for some method by which the workers will not only be attracted to a given plant, but will be induced to stay there after they have once been employed, a few employers of labor have suddenly discovered the value of improved housing and have begun to realize that the best way in which to make the job attractive to the right kind of worker and to hold him there is to make his home life attractive; that there is something more than mere shelter; that the better-class laborer is entirely human and craves the same things in life that the employer does; that he even wants beauty in his life, and quiet, and grass, and trees, and privacy, and space, as well as the essentials of light and air and water.

The realization of the desirability of such developments is too recent in this country for us to have as yet anything to compare with those of England, notably the famous employers' developments at Port Sunlight and Bourneville. Nor have we anything to compare, in either architectural style or attractiveness, with the garden villages of Hampstead and Wavertree.

In this series of articles we shall seek to describe some of the leading developments in this field in America.

One of the most recent is that at Beloit, Wisconsin, known as "Eclipse Park," undertaken by the Eclipse Home Makers, Inc., for the employees of the Fairbanks Morse Company, manufacturers of internal combustion engines and steam pumps, and employing about 3,600 men.

This is a garden village composed entirely of single-family, detached, free standing houses for mechanics earning $20 a week and up; in addition to mechanics, there are to be a few clerks and foremen.

This enterprise has especial interest because the manufacturer had the wisdom to seek expert advice at the very beginning; and for the further reason that the architect has been unusually free from the embarrassing limitations which a client often seeks to impose. In this case he has had as free a hand as architects ever have.

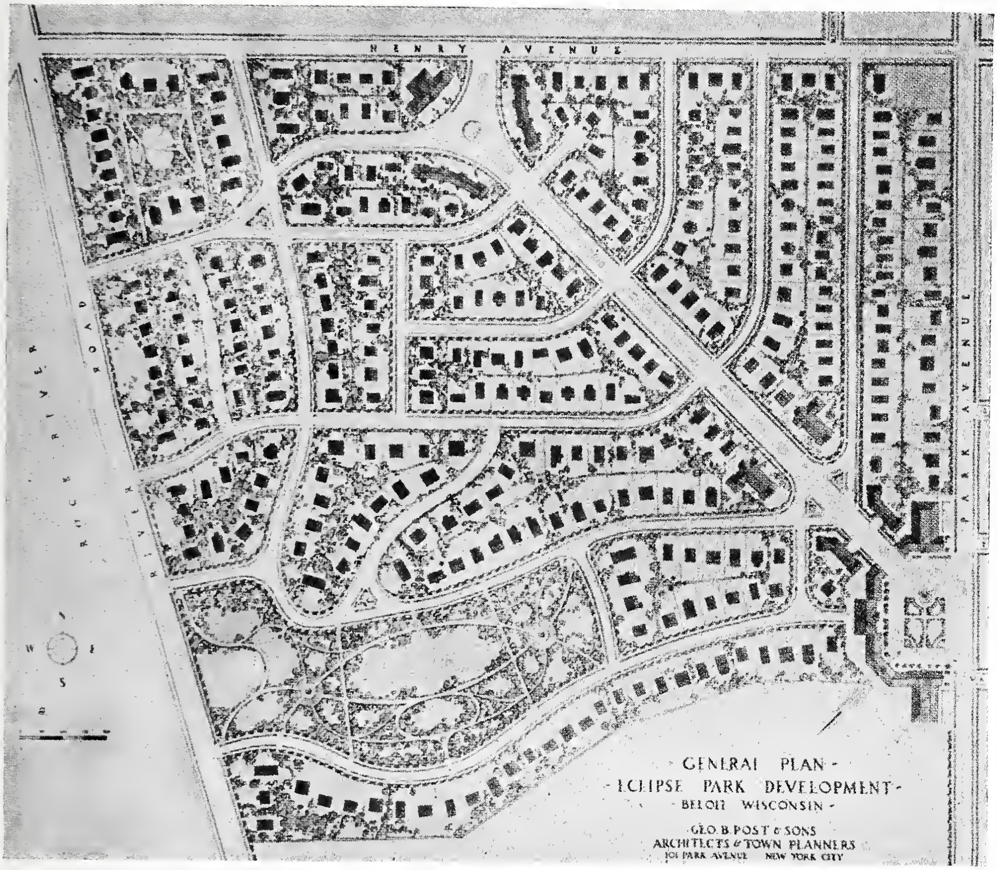
The result is a well-ordered and charmingly developed community of pleasant and attractive homes, enjoying the amenities of life in houses of artistic merit, skilfully diversified, free from monotony and yet harmonious in style and distinctively American—for the whole development is Colonial in treatment. There has been no attempt to transplant to America a style of architecture that is essentially English or French, but the architects have wisely chosen to give the country a typically American Garden Village.

Beloit is a city of about 18,000 people of diversified industries, of which the largest is that of the Fairbanks Morse Company. This company had the foresight some years ago to locate their plant on what was then the outskirts of the city and to acquire at that time and hold enough adjacent land to provide for the future housing of their employees. The result has been that they have avoided the payment of an excessive price for their land—the rock on which so many housing developments founder. Allowing for the increase in values which has come since the land was originally purchased and for the interest charges on holding it unproductive through that period, it is estimated that the land cost is less than $1,200 an acre, undeveloped.

On a tract of about fifty-three acres, located about one and a half miles from the heart of the city, "Eclipse Park" is situated. On the south, this tract immediately adjoins the Athletic Field and works of the Fairbanks Morse Company, in which the residents of the Park are practically all employed; so that for most of them it is no more than a five-minute walk from their homes to their work, and not more than a fifteen-minute walk for those persons living in the most distant part of the Park.

To the west is Rock River, from which the Park is separated by an attractive pleasure boulevard, River Road. To the north is the open country, the adjacent land being held by the company for a future development of the same kind. On the east the town is spreading out, developing with residences in the usual commercial way. Along the eastern boundary trolley lines lead directly to the heart of the city. The site is thus very accessible.

In its topography the land is especially advantageous. It is partly level, partly undulating. For about one-third of a mile it spreads along the river front. Here the land rises somewhat abruptly to a height of about twenty feet above the River Road, then slopes gradually to level country. About two-thirds of the



GENERAL PLAN, PROVIDING FOR 350 HOUSES—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS. GEO. B. POST & SONS, ARCHITECTS AND TOWN PLANNERS.

whole tract is level. All of the property fronting the river is heavily wooded with trees of unusual beauty and the natural beauties are being preserved throughout the development and heightened by the reservation of a tract of about eight acres as a park for the use of the residents. The level portion of the tract is being developed first, thus insuring no difficulty in marketing the remnants, a problem which frequently gives trouble to land developers. In this case the most attractive lots are being reserved till the last.

The whole area has been carefully laid out with city planning principles in view. The streets follow the natural contours, and steep grades have thus been avoided. The customary gridiron or checker-board plan will not be found here. The whole tract is divided into seventeen blocks or parcels, each one quite different in area and in shape. A reference to the general plan indicates how well this has been done. Nor has money been wasted, as is so often the case, in streets of too great width. All streets except the main boulevard are fifty feet in width (the boulevard is eighty feet wide). Roadways are eighteen feet wide, and sidewalks four feet wide; on the roadway side of the walk is a grass planting-strip four feet wide and on the house side of the sidewalk another grass strip eight feet wide. In addition, every house is set back at least twenty feet from the front line, thus insuring an effect of grass and shrubs and trees, and making a park-like appearance for the whole section.

No special recreation features have been provided inside this residential section other than the natural park, for the reason that the Athletic Field of the plant, in which the residents are employed, immediately adjoins it outside the Park.

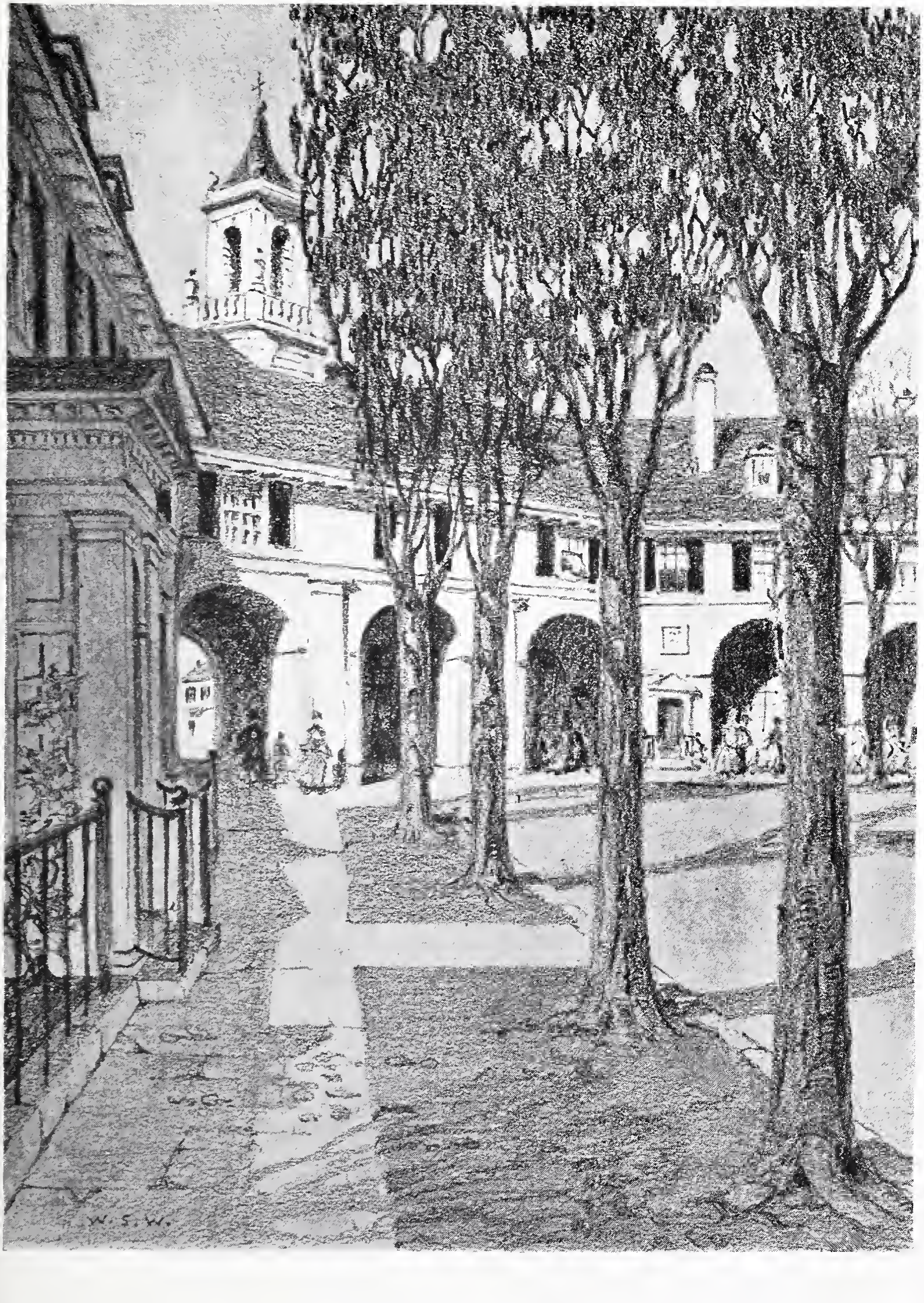
One of the very attractive features is the way in which the entrance to the Park has been treated. Here, it is proposed to construct a group of two-story buildings of good design and of irregular outline. The first story is to be treated as an arcade extending continuously around the enclosed portion of the entrance square, and will thus not only add to the attractiveness of the entrance, but will provide shelter for persons waiting for cars. The ground floor is to be used for stores of various kinds, a motion picture theatre, as well as quarters for a branch library, club rooms for civic organizations and the like. The second story will be used for apartments and offices.

In addition, provision is made inside the park for sites for churches and club houses and other public and semi-public buildings. These are located along the main boulevard at conspicuous points.

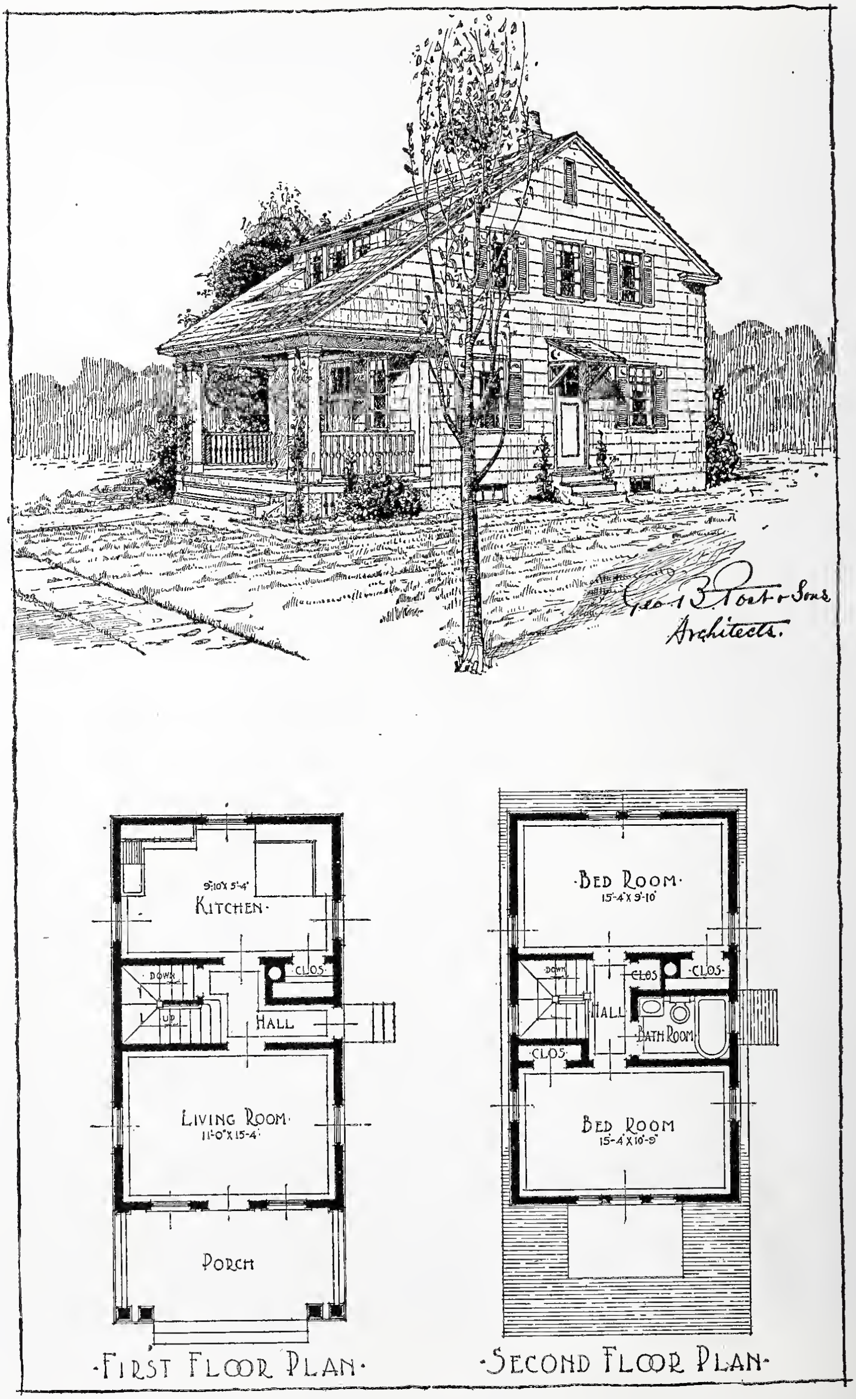
The company contemplates the building of 350 houses. Thus far fifty have actually been constructed and the foundations of a second fifty are now being laid. Five different types of houses have been used, namely, four-room houses, five-room houses, six-room houses, seven-room houses and eight-room houses. When the development is completed it is contemplated that there will be fifty houses of four rooms each, fifty-four of five rooms each, one hundred and ten of six rooms each, eighty-eight of seven rooms each, twenty-nine of seven and eight rooms each, and nineteen of eight and nine rooms. Although there are five types of houses, the architects with very great skill and much ingenuity have developed about forty different designs or styles of houses, all architecturally harmonious.

Of those of the A type, namely, the four-room type of house, there are ten variants; of the five-room type of house, there are eleven variants; of the six-room type of house, there are nine variants; of the seven-room type of house, there are eleven variants; and of the eight-room house, two variants, with additional designs in preparation.

The most distinctive achievement has been the skill with which this variety and individuality of treatment has been reached without sacrificing the harmony of the entire development and yet preserving a sense of individuality to each house. Not only have the architects shown great skill in this treatment of the project, but in applying the houses to the land this consideration has equally been borne in mind, so that while the houses



PROPOSED VILLAGE SQUARE ARCADE WITH SHOPS—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



FOUR-ROOM CLAPBOARD HOUSE (A-7). SALE PRICE, $2,400—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.

are all harmonious there is not the effect of a row of houses all alike that one so often finds even in the best thought-out developments of this country. To illustrate: In one block, where all the houses are of four rooms, the arrangement has been so varied as that the following different types have been placed on the lots in the following order—A-2, A-7, A-3, A-5, A-9, A-5, A-10, A-6, A-7, A-8, A-3, A-9, A-5 and so on. It is thus seen that there is no danger of monotony resulting.

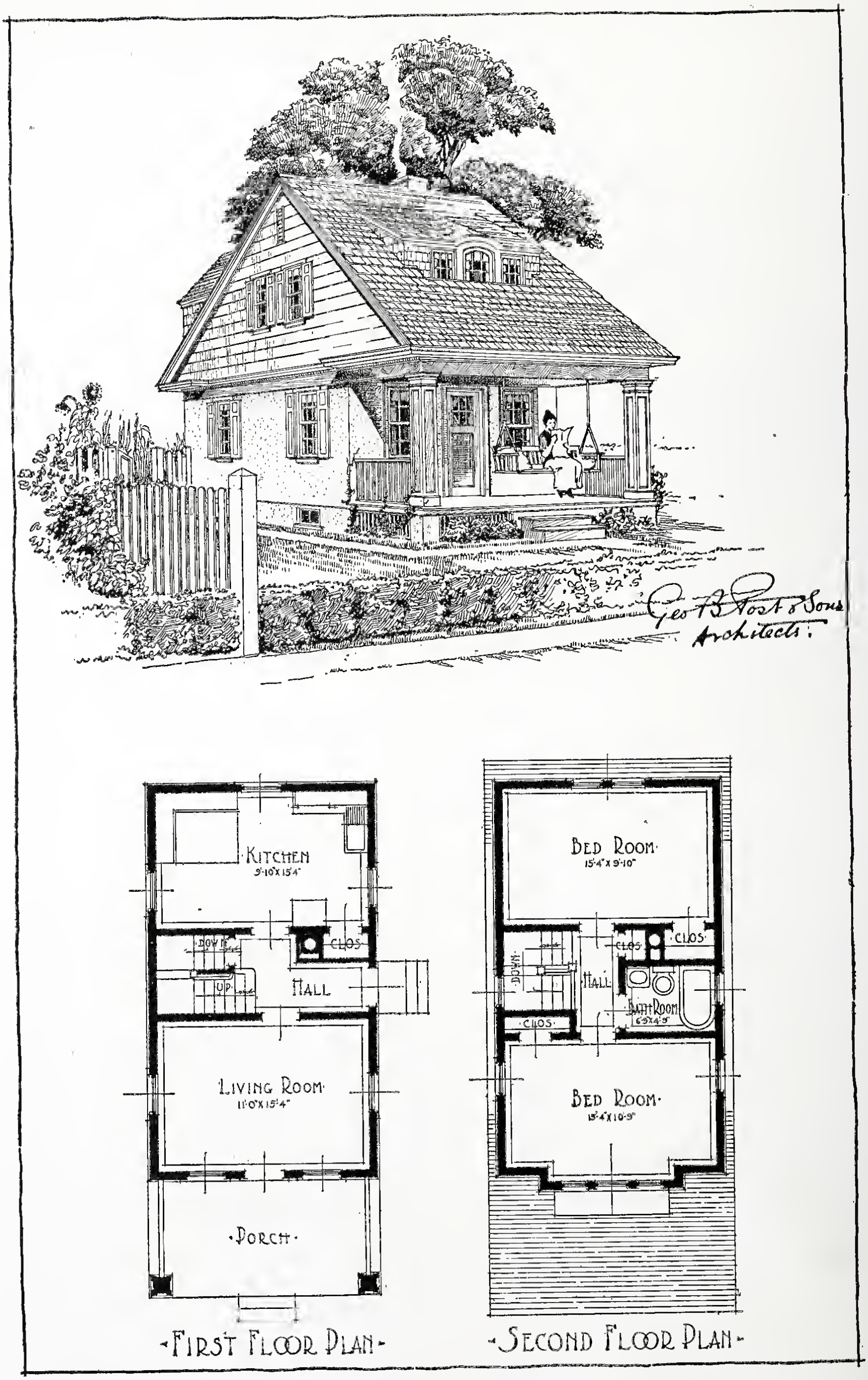
Every house is a single-family detached house. Every house has concrete foundations, with paved cellar seven feet in height in the clear, extending under the entire house. The cellar is equipped with a hot-air furnace, with flues and registers to all rooms. Each house has a bathroom on the second floor, with bathtub, modern toilet and wash basin. The houses are provided with electric lights in every room, and with ample closets in all bedrooms. No kitchen has an area of less than ninety square feet and some have as much as one hundred and fifteen square feet of floor area. Every kitchen is equipped with a modern sink and drainboard, dresser, gas range and closets for supplies. The latter are equipped with six rows of shelves for storage of supplies in bulk and of kitchen utensils. In the lowest priced houses—namely, the four-room houses intended for small families and persons of comparatively low-earning capacity—a separate dining room is not provided. The kitchen, however, is treated as a combined kitchen and dining room. The room is made larger and buffet corner seats are built in. In all the other houses there are dining rooms. The largest houses have a space at the kitchen entrance to accommodate a refrigerator. All houses have either back entrances or side entrances to the kitchen. Every house is provided with a piazza or porch.

Owing to the character of the water supply in Beloit, it being very hard, set washtubs have been omitted in practically all the houses except a few of the larger and more expensive ones, where washtubs are placed in the cellar. This, to the mind of the writer, is a very serious defect from the point of view of convenience of living and he ventures to predict that in future houses the owners will see the wisdom of providing set washtubs for all houses.

Ceiling heights on the first floor are eight feet four inches in the clear; on the second floor seven feet nine inches in the clear. Where a roof slopes near a floor level there is at least five feet head room. Every bedroom has at least one clothes closet and on each bedroom floor there is in addition a linen closet.

Some of the houses are stucco over frame; others are clapboard and shingle. The roofs are shingled roofs. The plumbing has been standardized for all the houses, thus reducing the cost appreciably. Similarly, wherever possible, other economies have been practiced, with minimum waste resulting through intelligent methods employed in cutting timber, the sizes of the houses having been designed with this in view. The houses are all two stories high, with one exception, there being one bungalow type, and all have sloping roofs. While the sloping roof has been employed to secure architectural effect, great care has been taken at the same time that it should not result in unlivable rooms in the upper story. A study of the plans and elevations will show what attractive bedrooms have been designed.

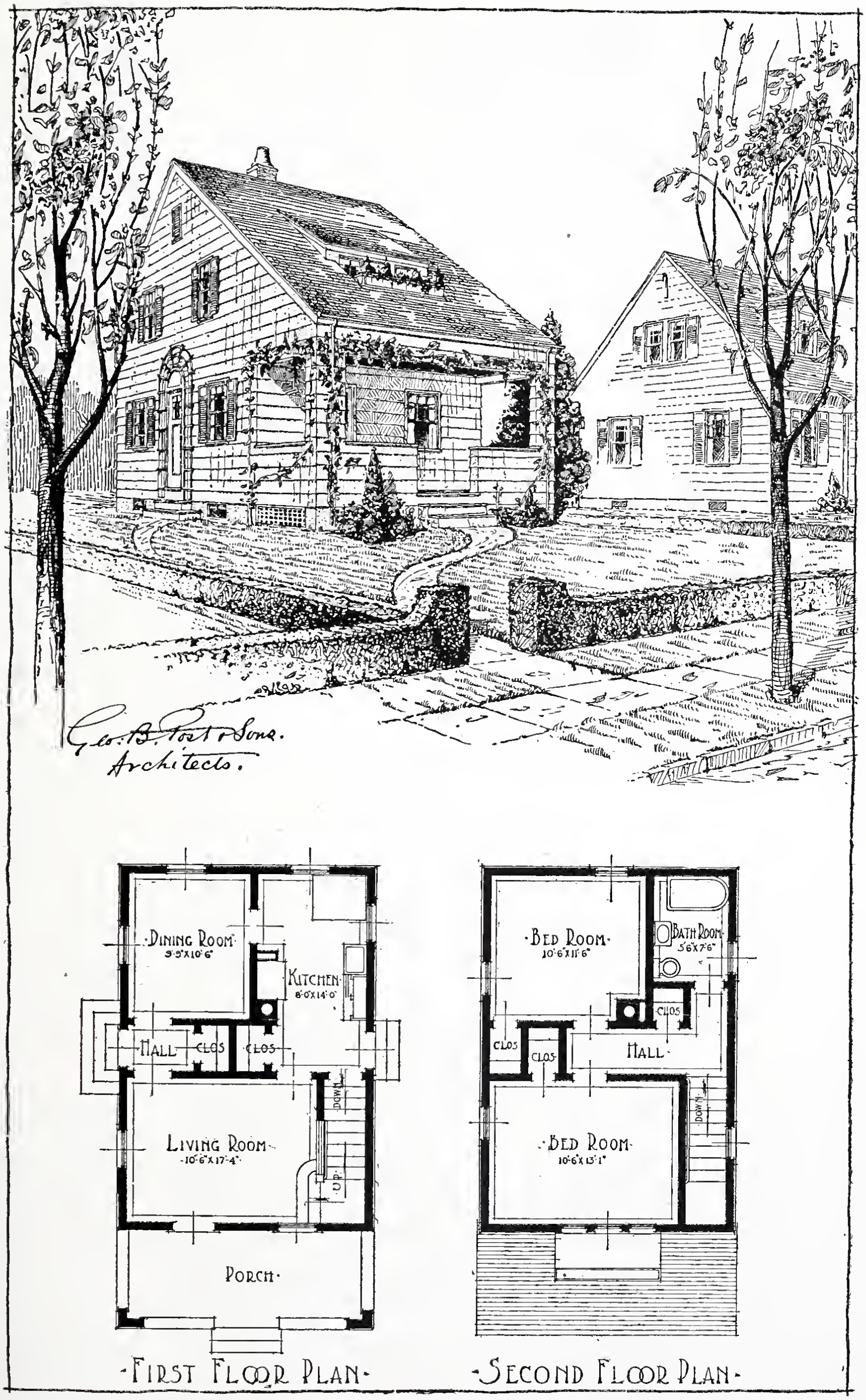
The lots vary in size. None are less than forty feet in width or eighty feet in depth. The various frontages employed have been forty feet, forty-five feet, fifty feet, fifty-five feet and sixty feet. The various lots depths are eighty feet, ninety feet, 100 feet and 110 feet. An effort has been made to adjust the size of the lot somewhat to the pocketbook of the purchaser. The four-room houses thus have been placed on lots forty by eighty; the five-room houses on lots forty-five by ninety; the six-room houses on lots fifty by 100, and so on. There are no alleys. All houses are at least fifteen feet apart; that is the minimum distance between buildings. In many cases they are set with greater space between adjacent houses. There are about seven families to the gross acre. The buildings occupy about twelve and one-half per cent. of the whole area; the rest is devoted to



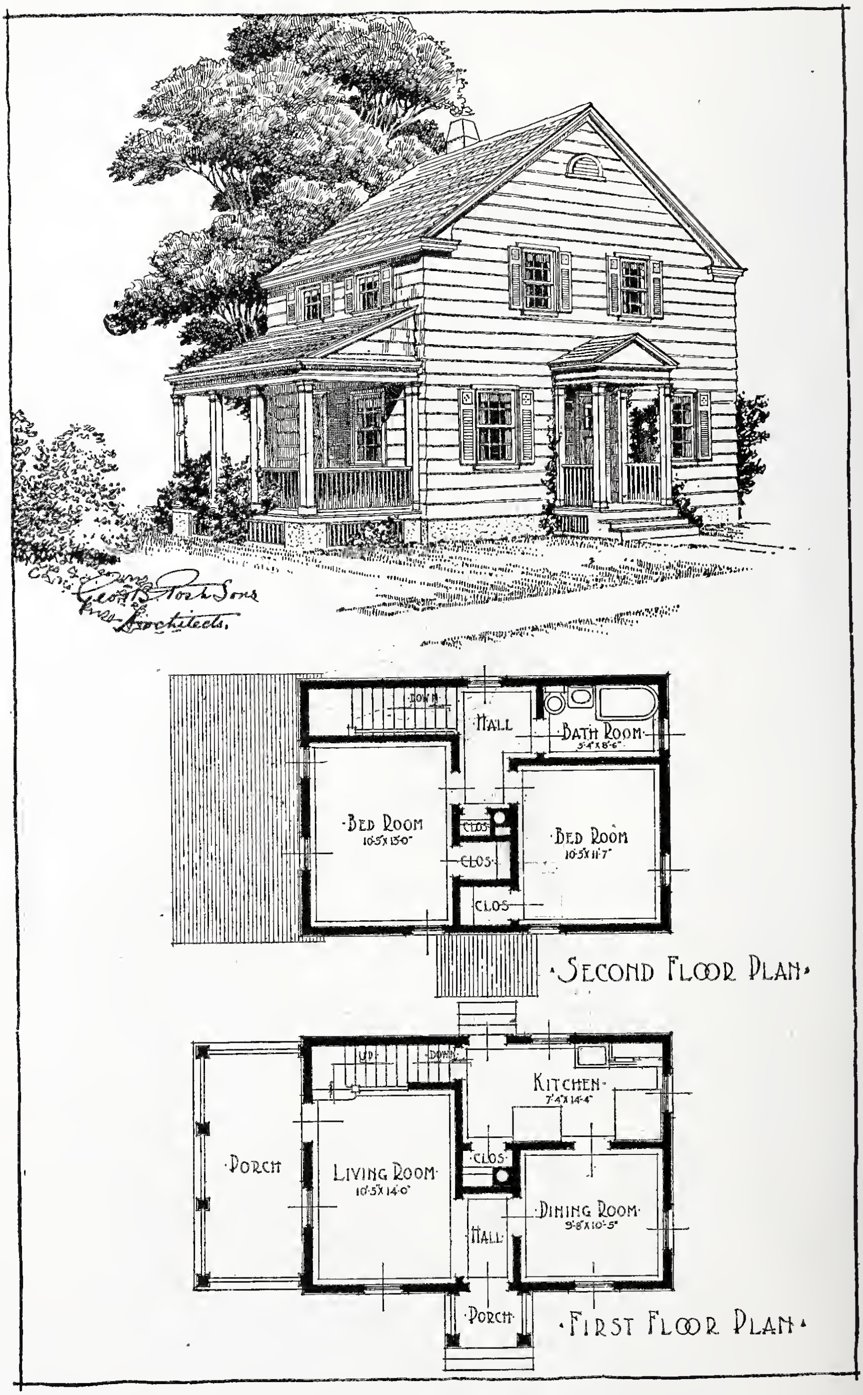
-First Floor Plan-

-Second Floor Plan-

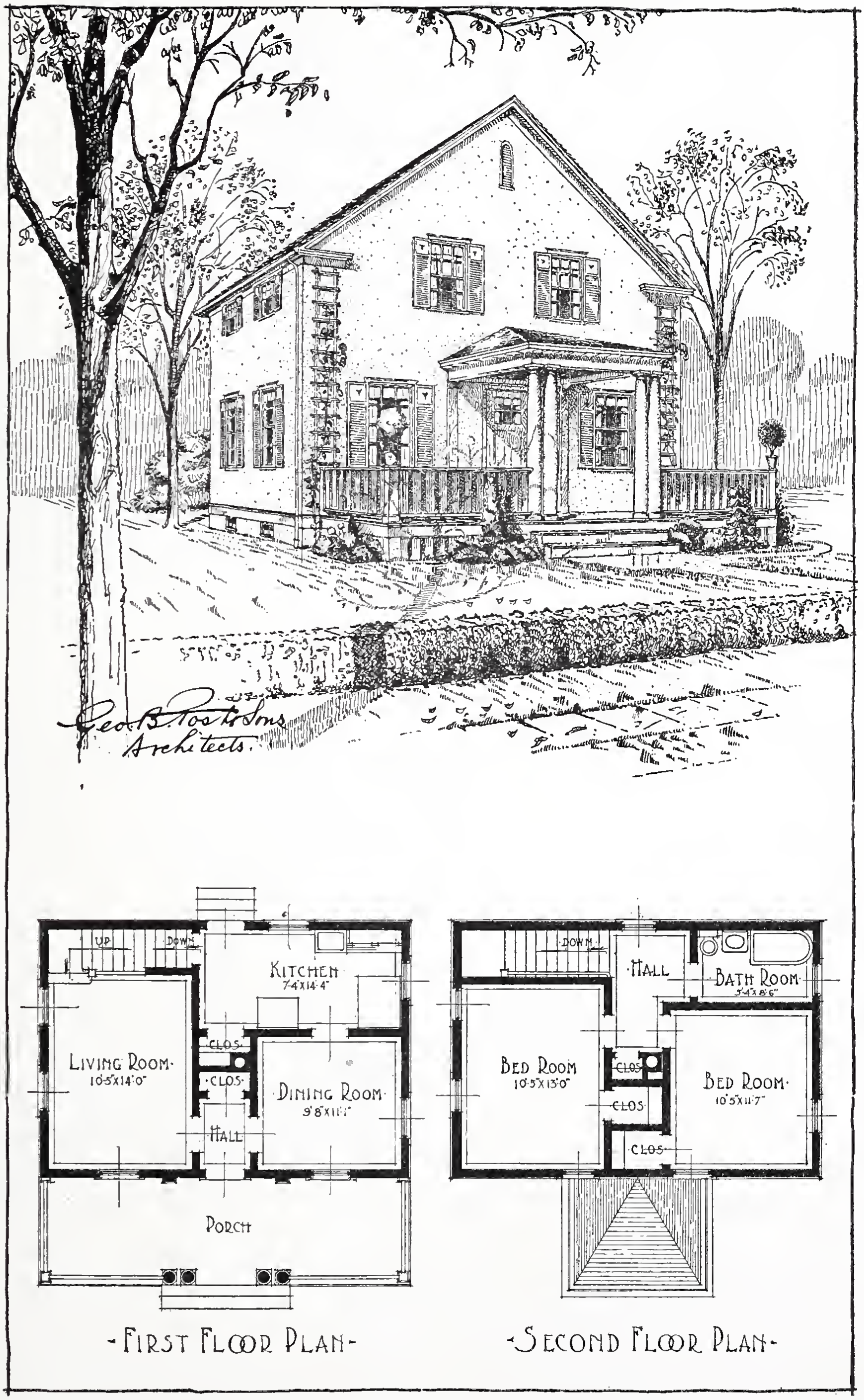
FOUR-ROOM STUCCO AND CLAPBOARD HOUSE (A-6). SALE PRICE, $2,400—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



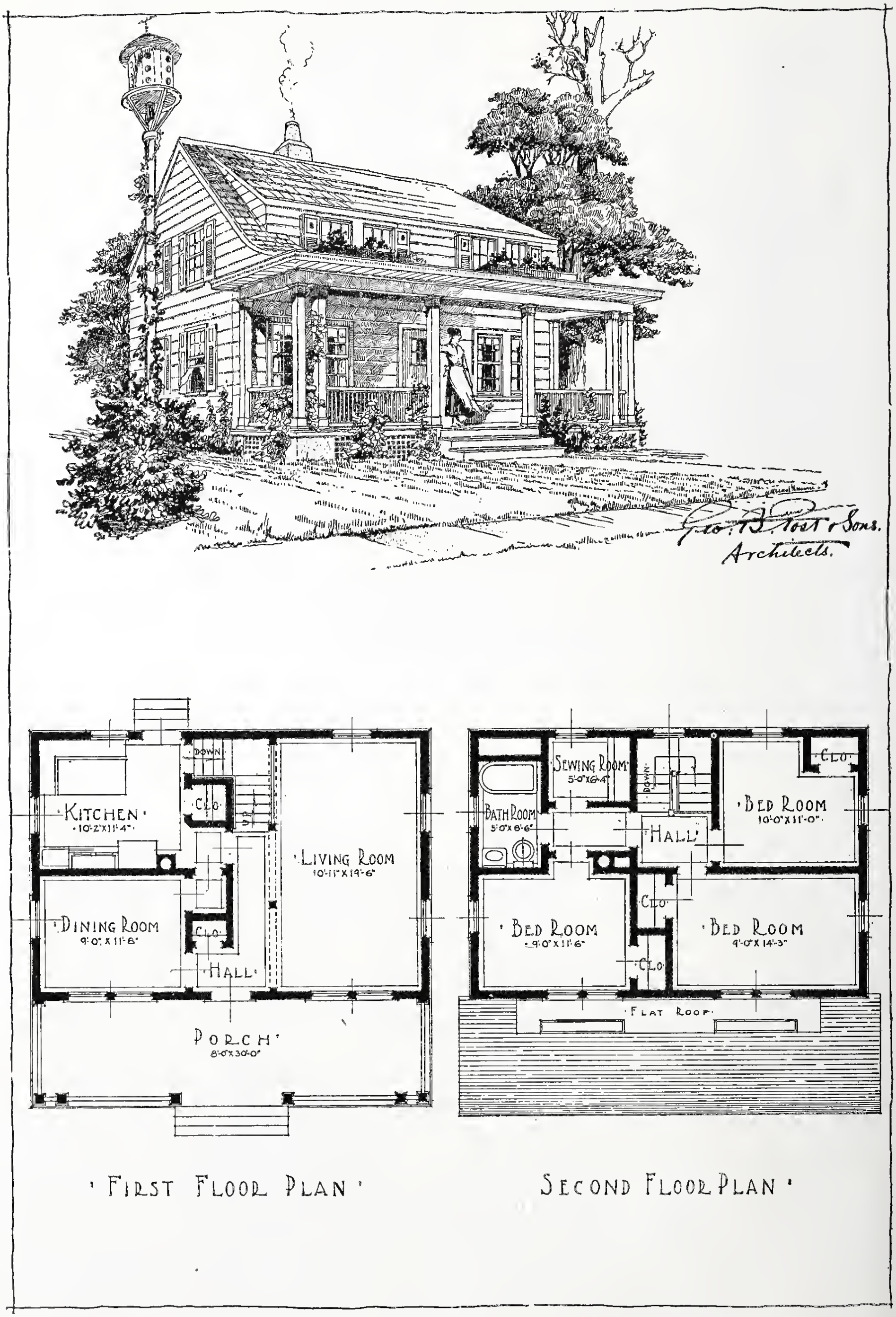
FIVE-ROOM CLAPBOARD HOUSE (B-4). SALE PRICE, $2,500—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



FIVE-ROOM CLAPBOARD HOUSE (B-8). SALE PRICE, $2,500—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



FIVE-ROOM STUCCO HOUSE (B-9).
SALE PRICE, $2,750—ECLIPSE PARK
DEVELOPMENT, BELOIT, WIS.



SEVEN-ROOM CLAPBOARD HOUSE (C-5). SALE PRICE, $2,750—ELIPSE PARK DEVELOPMENT, BELOIT, WIS.

streets and open spaces. Every house is set back at least twenty feet from the front line and some as much as thirty-eight feet.

The development is a complete one; for, the company is not only making the streets, sidewalks and curbs, installing sewers and water supply, but also contemplates carrying out a complete garden scheme, planting trees and shrubs as well as lawns.

Great care and study has been given to the orientation of the houses and to a consideration of the prevailing winds, which come from the west, off the river. A study of the general plan will show to what extent this has been carried out. Types of houses in one case front with the narrow dimensions on one street with the piazza in the front; and in other cases, where it was necessary to get the most desirable exposure, the same house has been turned around so as to have the long dimension of the house facing upon the front with a broad piazza, securing in that place the best exposure.

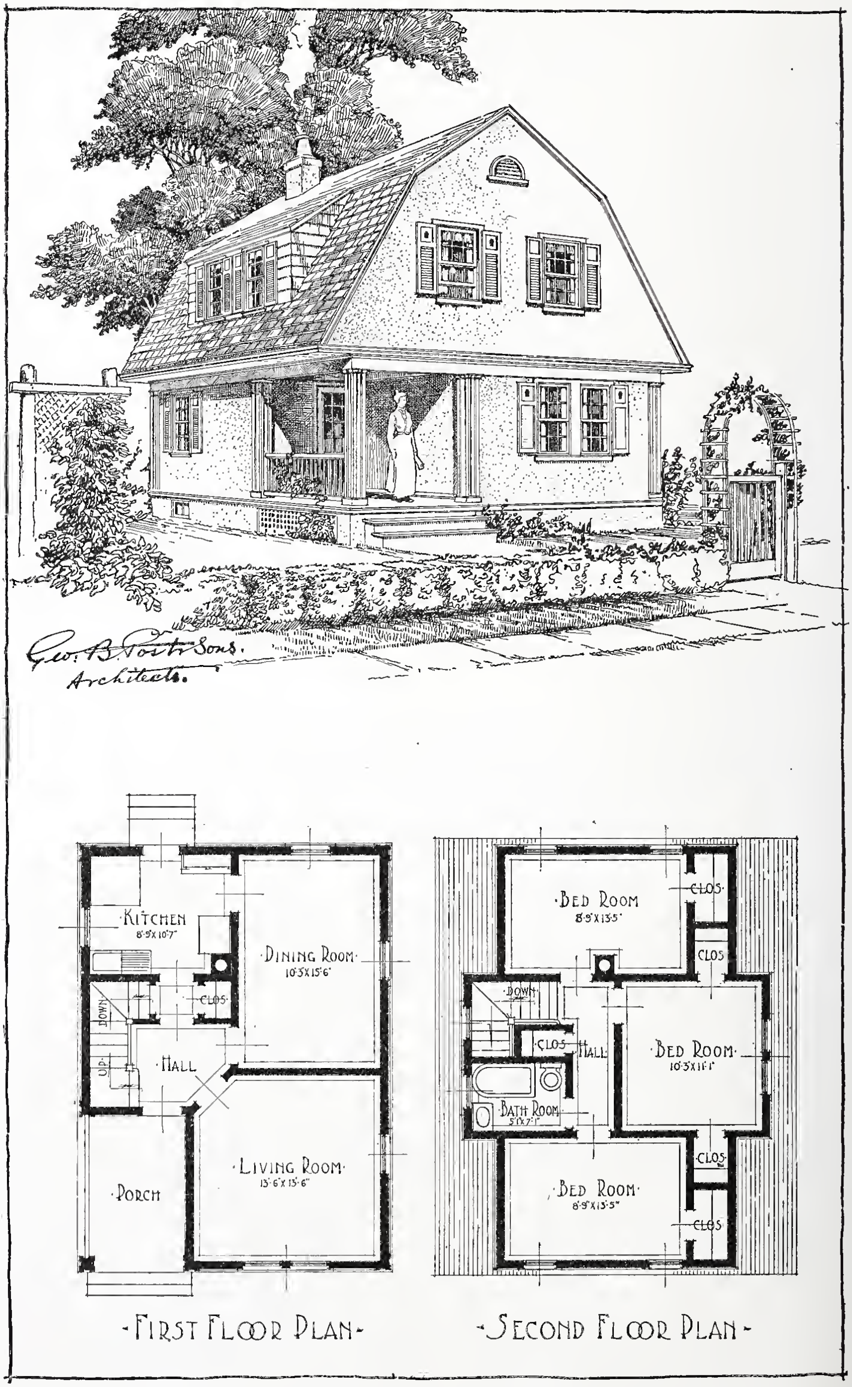
The architects' drawings and floor plans, accompanying this article, will well repay careful study. Photographs of the actual houses are not presented, for the reason that the development is still too raw, hardly any of the houses being entirely completed, to make such presentation possible.

Scrutiny of these floor plans shows that the architects have employed unusual skill in eliminating waste space; in making rooms of attractive shapes as well as of ample size; in grouping the rooms with regard to the greatest convenience of access and at the same time always having an eye to economy of construction and keeping the building as near the square as possible, thus reducing cubage.

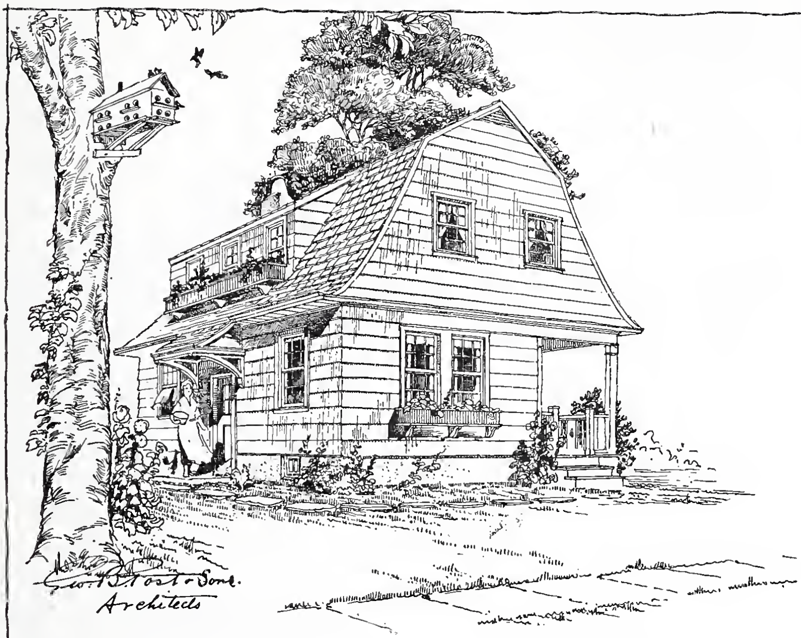
While no provision has been made anywhere in the development for the housing of single workers in boarding houses or hotels (the most desirable and satisfactory way), consideration has been given to the possibility of some of the residents desiring to take roomers; and while it has not been the intention or desire of the company to encourage this bad practice, it has recognized it as a probable and necessary evil and the architects have accordingly drawn their plans with this in view. Rooms suitable for lodgers have been provided in such manner as to insure privacy to the family. The scheme is thus a flexible one. Where a family is large and it is not desired to take in roomers, the house fits the family. Where the family is small and roomers are desired, the same house is equally suitable. The architects have been unusually successful in their treatment of the bedroom accommodations. In nearly every case cross ventilation has been obtained, not only from one room to another, but in every room. This is of great importance. Moreover the beds and other furniture have been planned so as to avoid having a bed pushed up against a window, with the result that the window is kept closed when it should be open. It is a common experience in workingmen's dwellings to find that, when the furniture is put in the room, the occupant either has to forego the use of the windows or access to the clothes closet. All of this has been thought out and overcome. All bathrooms not only have been standardized so that the fixtures and sizes are alike in practically all of the houses, but in every house the plumbing has been likewise concentrated, the bathroom being immediately over the kitchen; in fact, the lines and fixtures are directly over each other, thus insuring considerable economy.

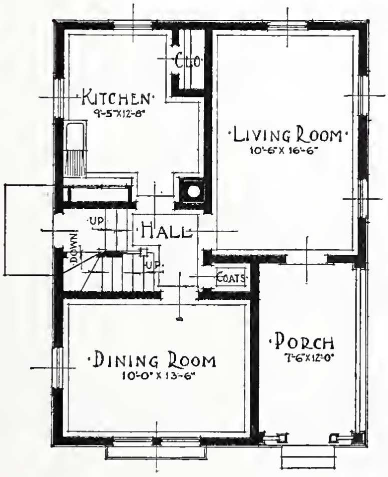
As illustrative of the care with which the architects have studied their problem and sought to avoid monotony and secure variety of treatment, may be cited the ingenious variations in the style of outside shutters used on the different houses—eight different types of shutter designs have been thus provided. Similarly, with regard to the treatment of the chimney caps—seven different types of chimney caps have been evolved and five different types of window flower boxes, each one suited to the particular house on which it is to be used.

It is to be regretted that it has not been possible to obtain from the company exact figures as to the cost of each type of house. The company quotes the following selling prices on the vari-

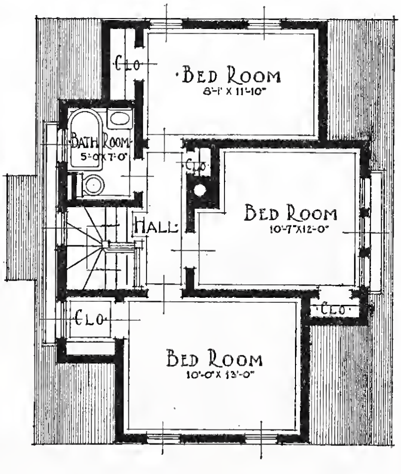


SIX-ROOM STUCCO HOUSE (C-9).
SALE PRICE, $2,750—ECLIPSE PARK
DEVELOPMENT, BELOIT, WIS.



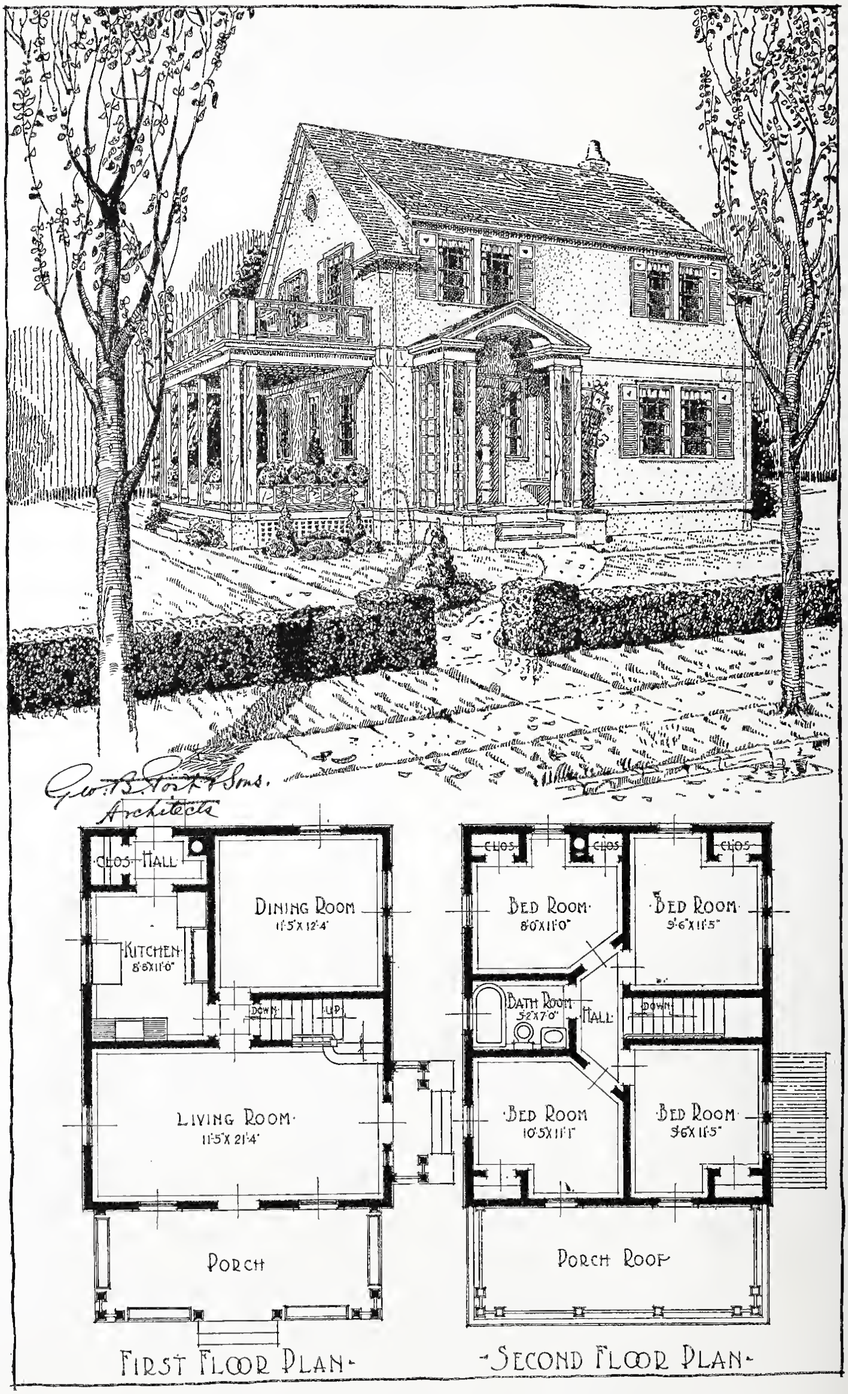


FIRST FLOOR PLAN

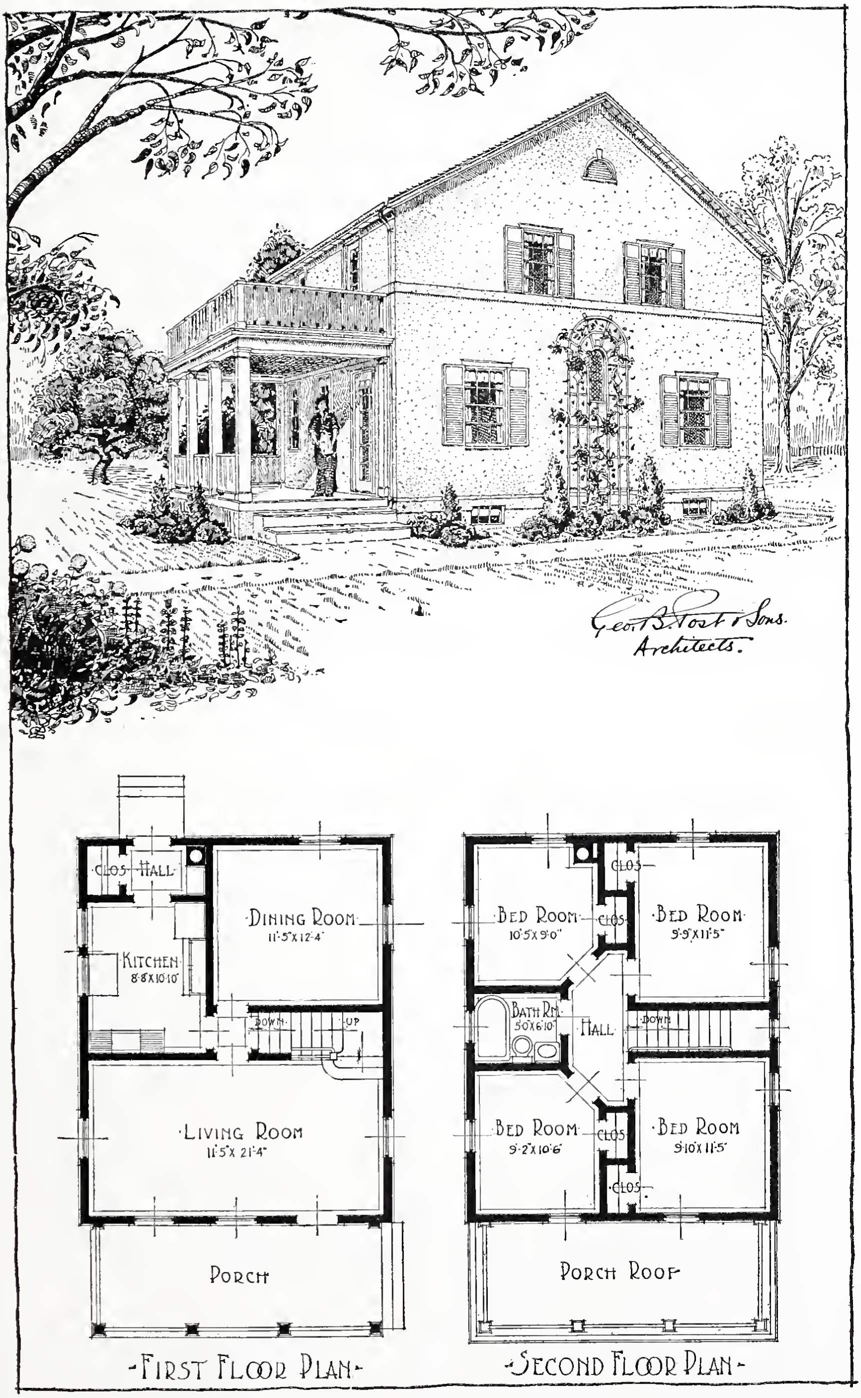


SECOND FLOOR PLAN

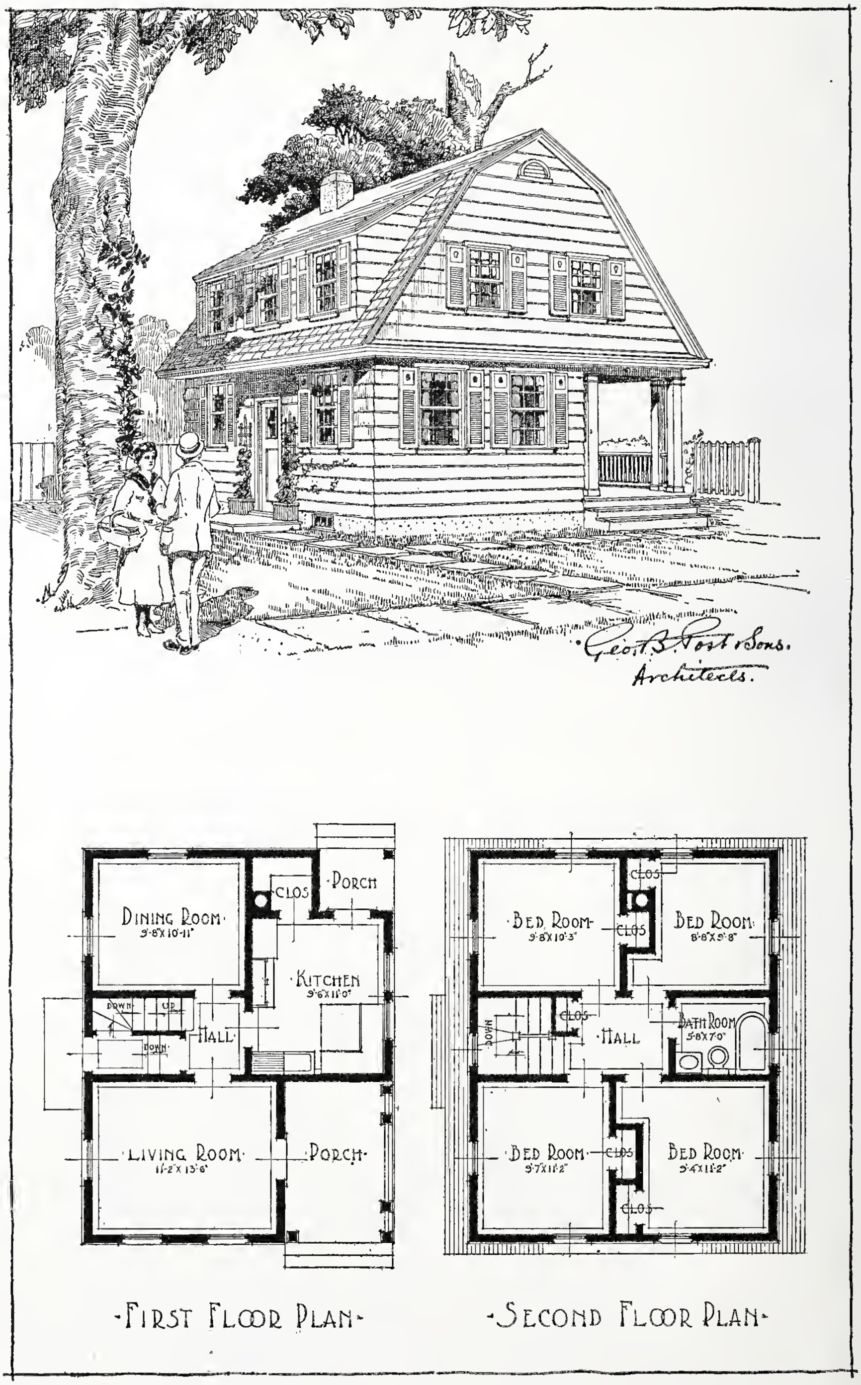
SIX-ROOM CLAPBOARD HOUSE (C-8). SALE PRICE, $2,750—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



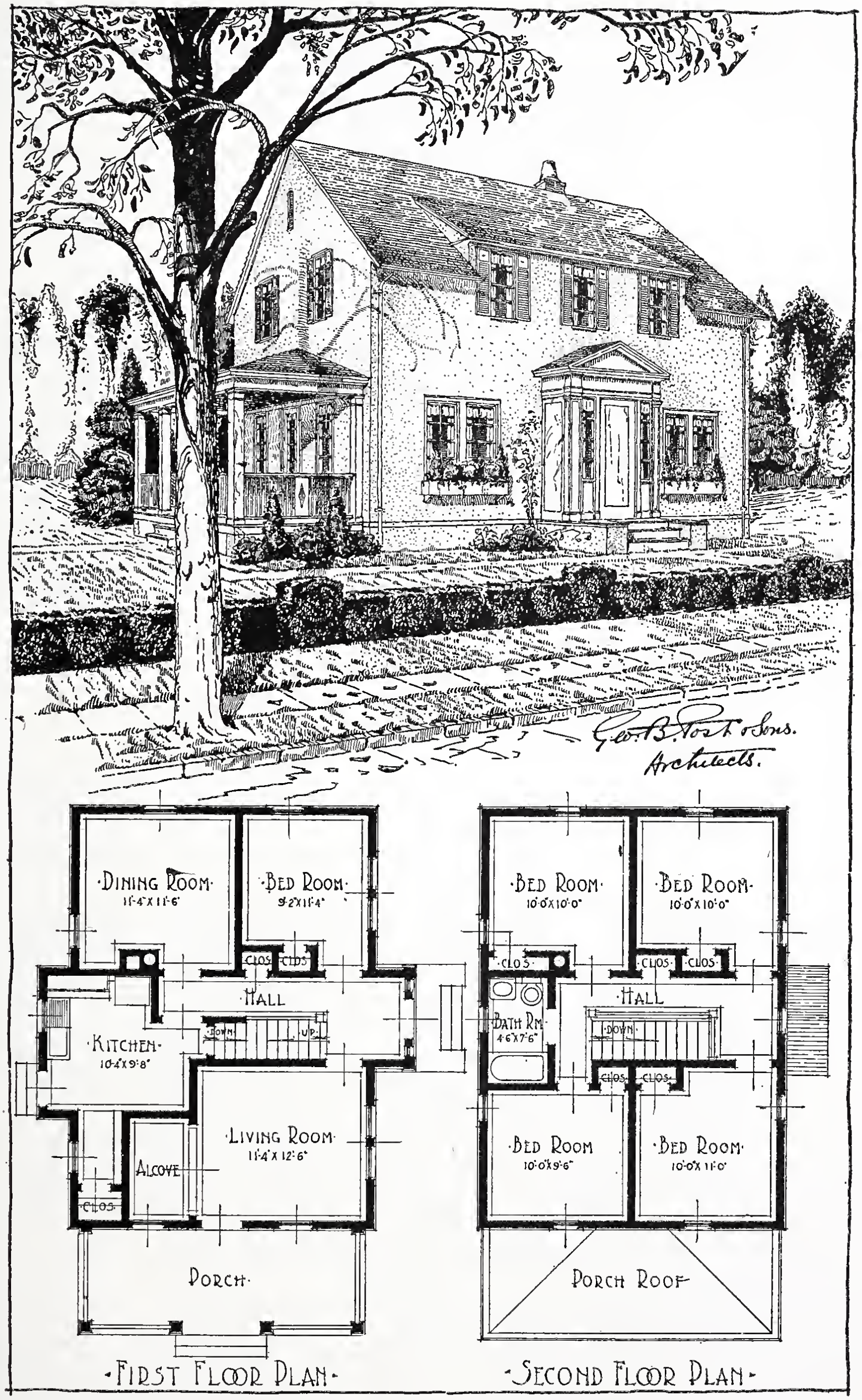
SEVEN-ROOM STUCCO HOUSE (D-5).
SALE PRICE, $2,850—ECLIPSE PARK
DEVELOPMENT, BELOIT, WIS.



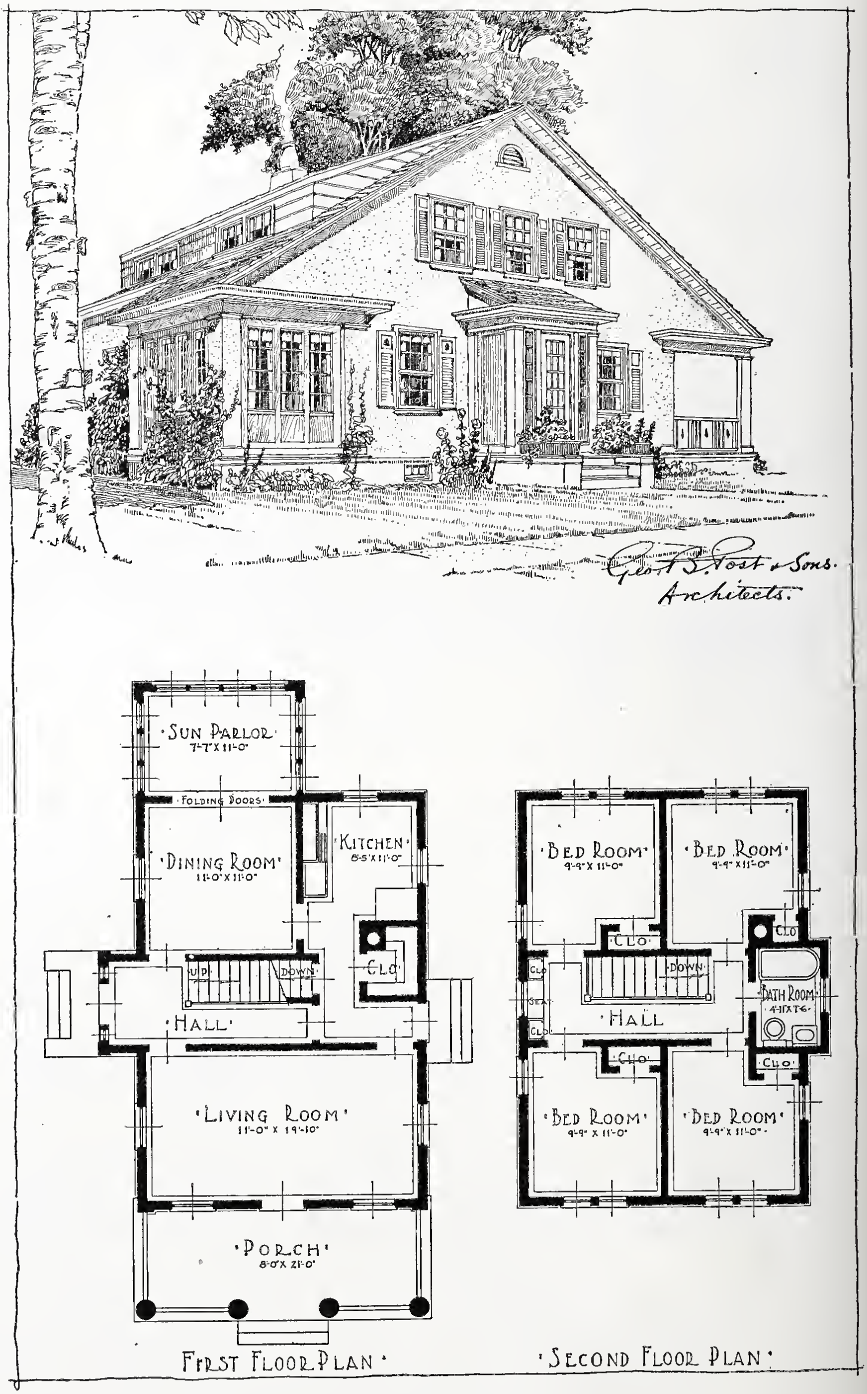
SEVEN-ROOM STUCCO HOUSE (D-4). SALE PRICE, $2,850—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



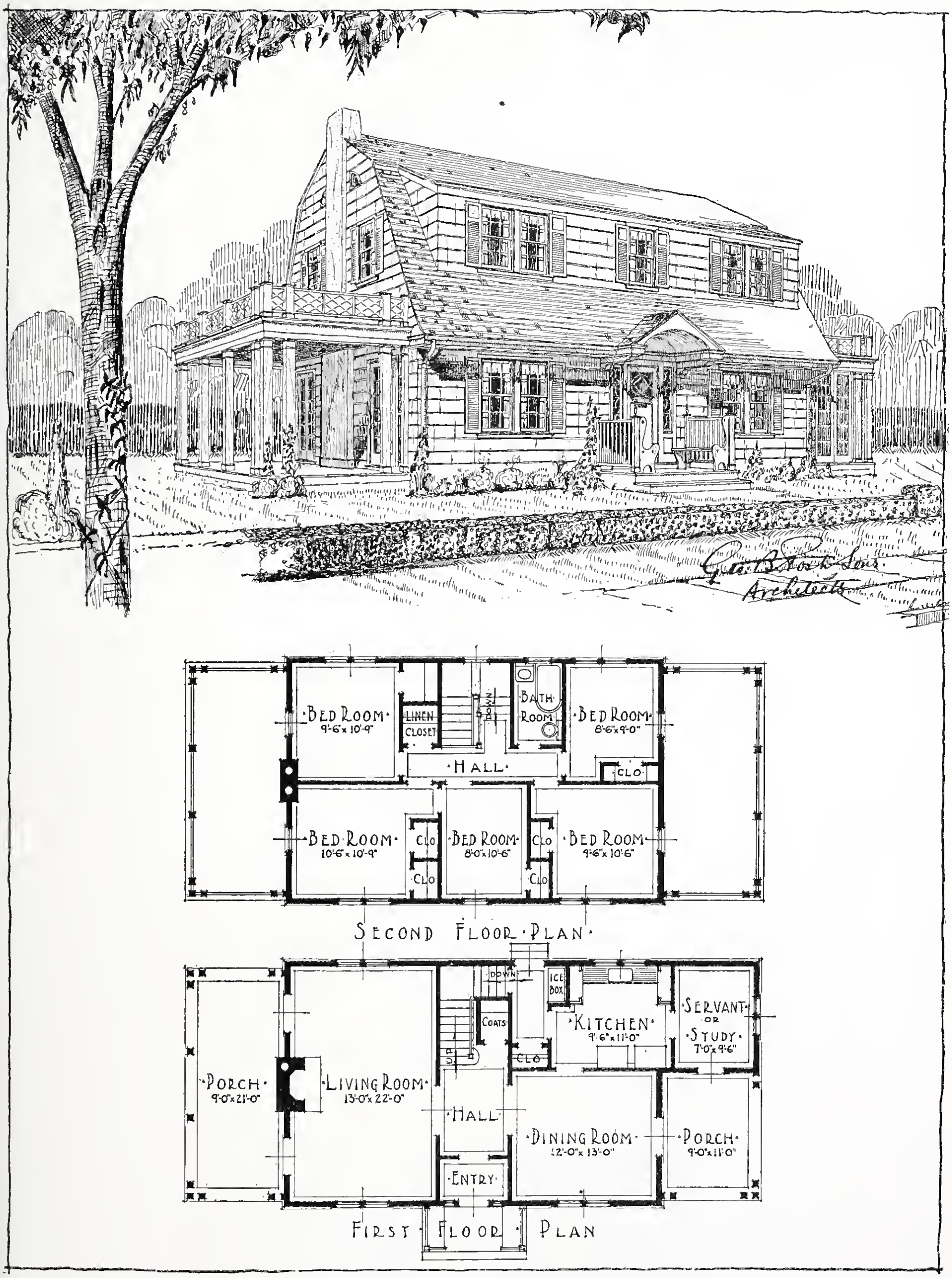
SEVEN-ROOM CLAPBOARD HOUSE (D-2). SALE PRICE, $2,850—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



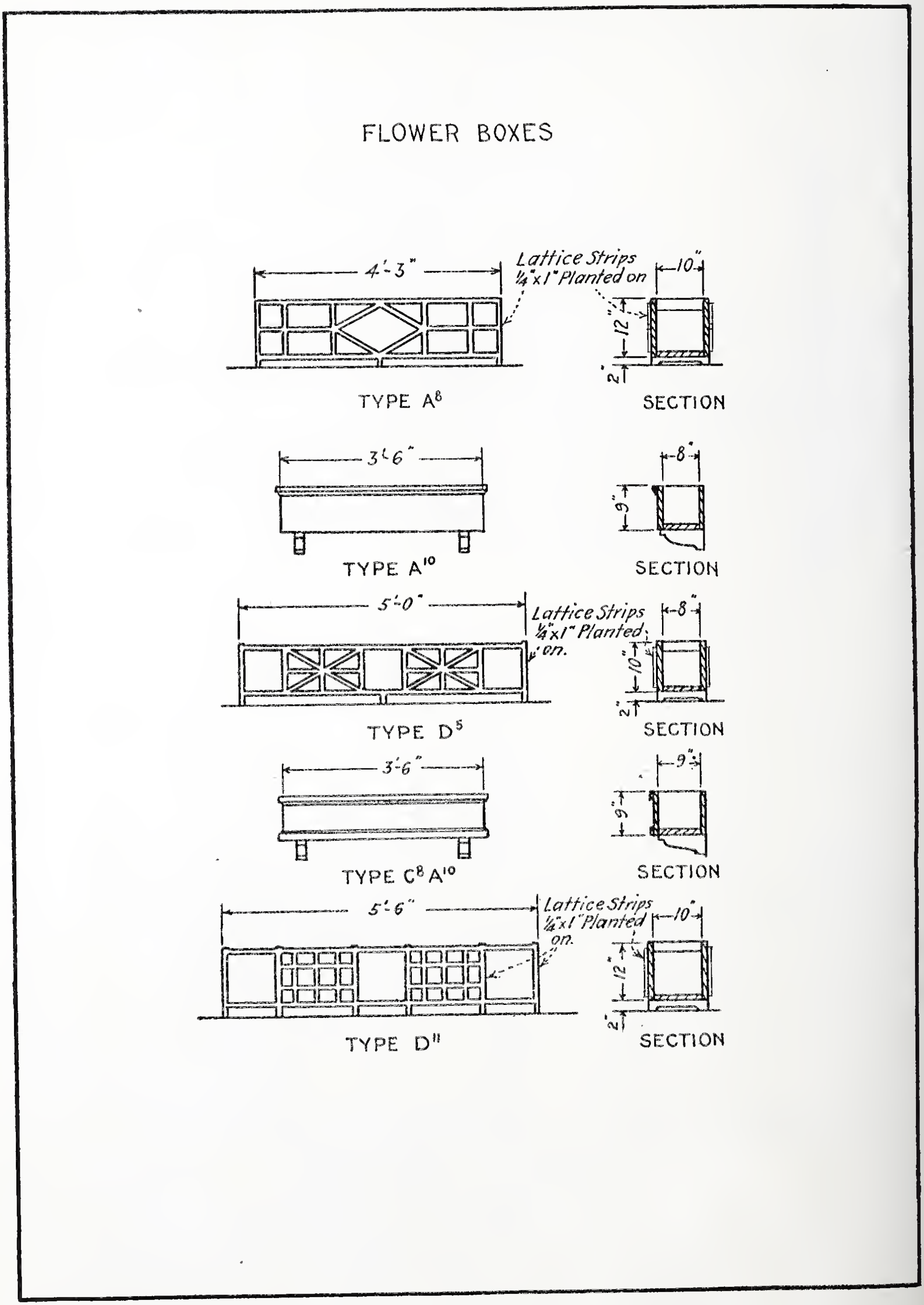
EIGHT-ROOM STUCCO HOUSE (D-3).
SALE PRICE, $2,850—ECLIPSE PARK
DEVELOPMENT, BELOIT, WIS.



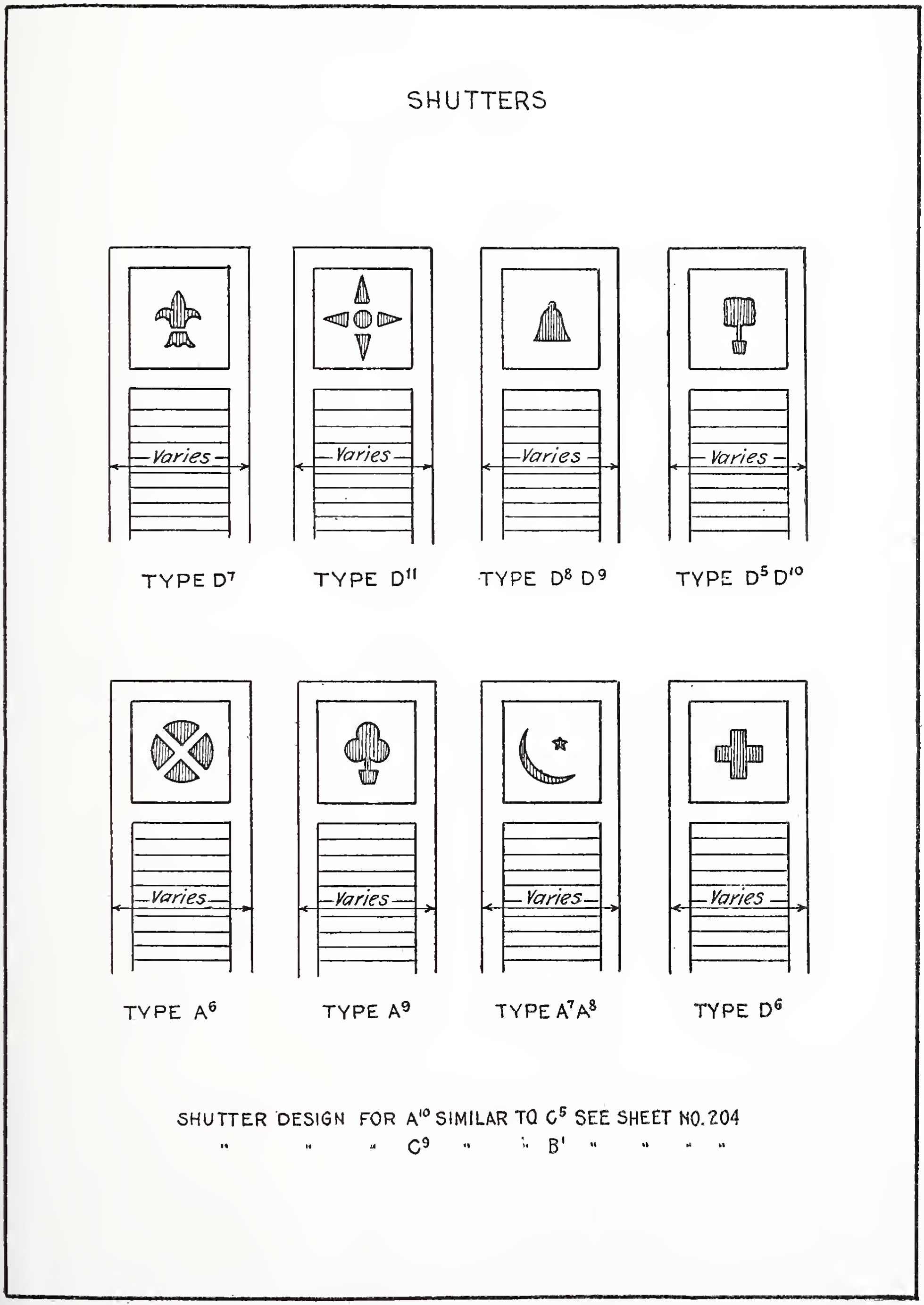
SEVEN-ROOM STUCCO HOUSE WITH SUN PARLOR (D-8). SALE PRICE, $2,850—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



SUPERINTENDENT'S HOUSE,
NINE ROOMS—ECLIPSE PARK
DEVELOPMENT, BELOIT, WIS.

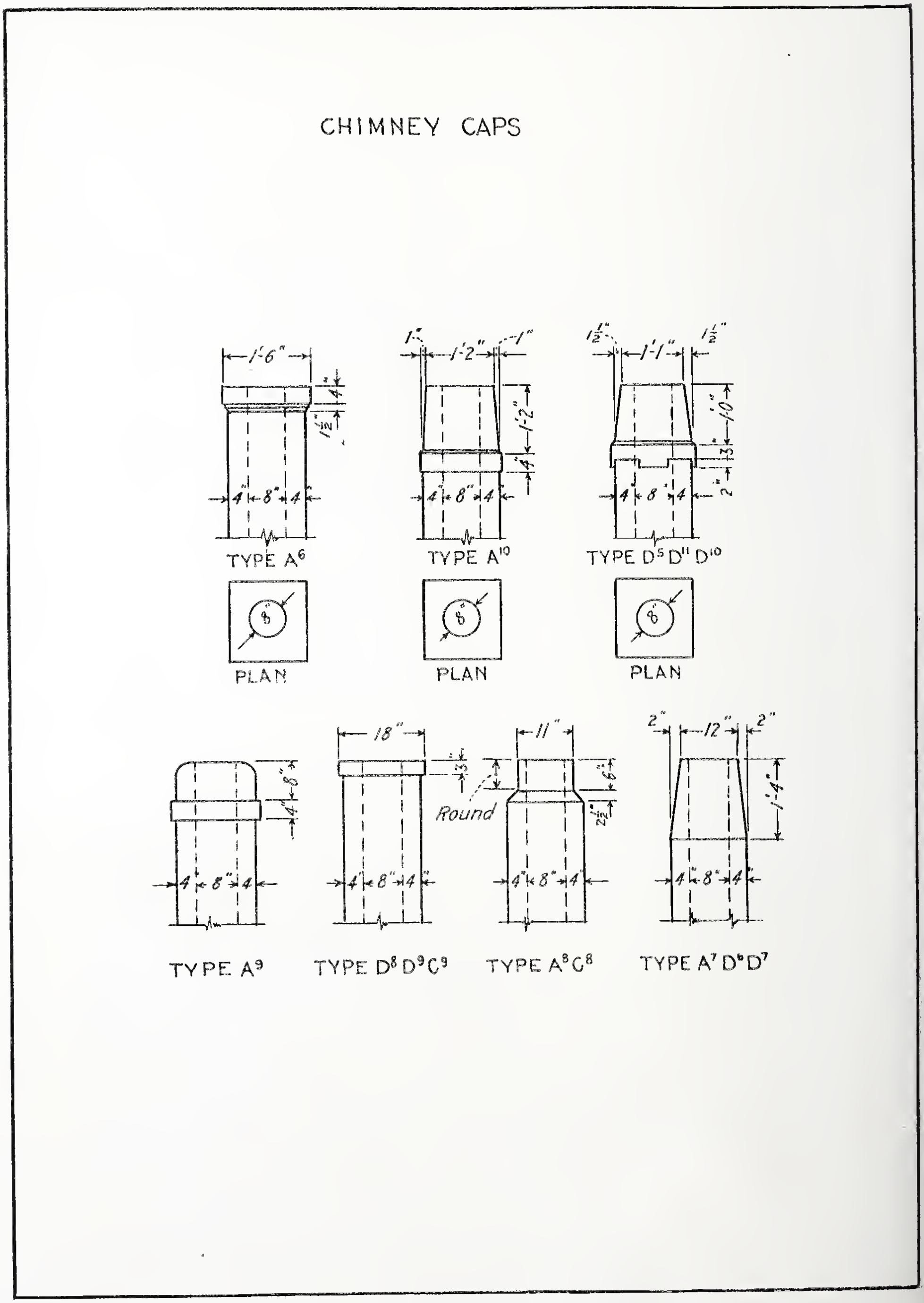


WINDOW BOXES—ECLIPSE PARK
DEVELOPMENT, BELOIT, WIS.

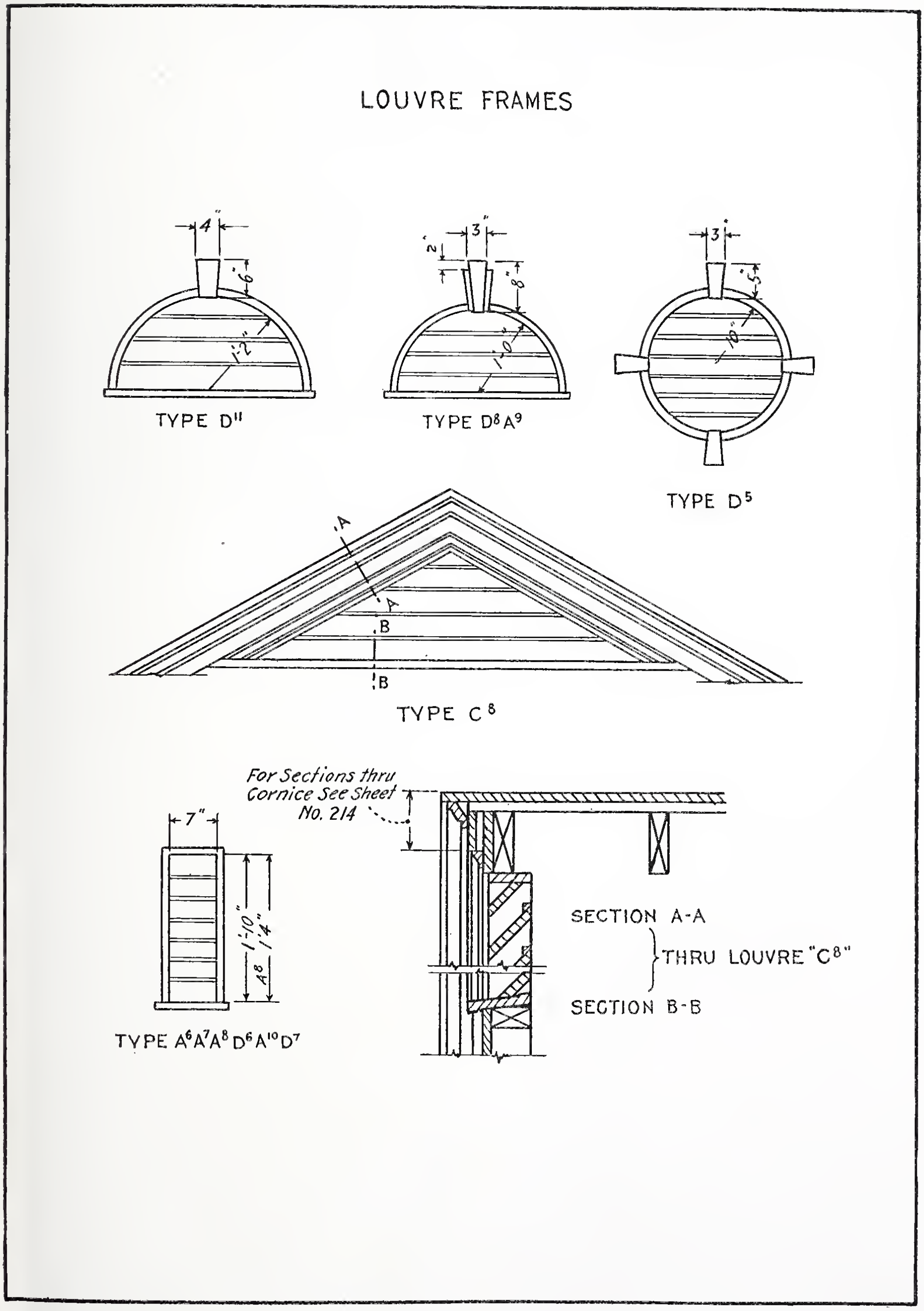


SHUTTER DESIGN FOR A^{10} SIMILAR TO C^{5} SEE SHEET NO. 204
" " " C^{9} " " B^{1} " " " "

WINDOW SHUTTERS—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.



CHIMNEY CAPS—ECLIPSE PARK
DEVELOPMENT, BELOIT, WIS.

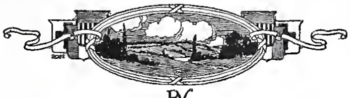


LOUVRE FRAMES—ECLIPSE PARK DEVELOPMENT, BELOIT, WIS.

ous types of houses: Four-room house, $2,400; five-room house, $2,500; six-room house, $2,750; seven-room house, $2,850; eight-room house, $3,100. All houses are to be sold; none rented. A plan of sale on easy terms to the purchaser on the basis of ten per cent. down and the balance at so much a month is now being worked out. The houses that have already been built have been immediately gobbled up, the demand being extremely great.

Summing up: This development is one which marks real progress in the housing of America's working people. While it cannot compare in beauty with the best developments of England, it gives promise of being one of the most artistic and attractive thus far evolved in this country. In the planning of the houses, it possesses unusual merit. The houses have been produced at a price well within the purchasing power of the workingmen for whom they are intended, and yet they possess architectural charm, and style. Great skill and ingenuity have been shown in producing many varieties of various types, thus avoiding monotony and yet not disturbing the architectural harmony of the entire scheme. The needs of the people living in the houses have been closely consulted and met. The stereotyped checkerboard or gridiron plan has been avoided, natural contours have been followed, natural beauty preserved, and a real Garden Village developed with its curved streets, its narrow roads discouraging heavy traffic, its irregular shaped blocks varied in outline, its community centre and its group of public and semi-public buildings along its main thoroughfare.

OUR WAR HOSPITALS IN FRANCE



By

EDWARD F STEVENS

THE time has come when our United States troops are taking their places on the firing line, in the trenches and in the various activities at the front; and the Nation's thought centers on the transportation, the housing and the feeding of these men in the vigor of their health and strength and growing manhood and on the providing of munitions and equipment for aggressive warfare. We forget, for the moment, that with victory comes also terrible suffering from the injuries and sickness caused by this winning of victory, and that proper and adequate housing and provision for all emergencies must be provided. We cannot, however, take the view of the good lady of a children's hospital committee who, when the plans for a new hospital were being considered and when the architect was discussing the location of the operating room and the morgue, said: "Why, these children mustn't be operated upon, and they are not going to die." We must have adequate facilities for expert care of our injured soldiers, for every soldier returned to the trenches adds to the fighting power of the army by just that much, and every day that can be gained in early convalescence adds toward victory.

When we consider what our two allies, England and France, have already provided in hospitals, we realize what we must do. In the spring of 1916 France had six hundred thousand beds and England five hundred and fifty thousand beds in field, base, private and public hospitals, for the army alone. The statistics go to show that there are twenty-five per cent. of casualties and sickness needing hospital care; so it is easy to see what we shall need in our hospital divisions. How is our Government meeting this demand? Hospital unit after hospital unit is being sent over; the best surgeons, medical specialists, and nurses of our land are offering their services and are going to the front. The Government must provide proper housing, wards, operating rooms, laboratories and equipment for accomplishing the necessary work; much material must be shipped from this country, not only the portable equipment, but many of the buildings themselves, so that upon arrival the erection can be accomplished with the minimum amount of labor.

The planning of these hospital buildings was placed in the hands of Mr. Charles Butler and the writer by the General Engineer Depot, U. S. Army, of which Lieutenant Colonel W. H. Rose is the head, and the plans have been approved by the office of the Surgeon General, U. S. Army. A brief description follows:

These units consist of eighty-seven buildings each, and comprise all the essential departments of an up-to-date hospital, all of "demountable" portable construction. The type of construction used is similar to that employed by Mr. Butler for the Rockefeller Demonstration Hospital in New York.

The block plan (Fig. 1) shows the ideal grouping of buildings; but the actual layout on the ground must depend on the available site, on the contour of the land, on the local surroundings, etc. The orientation of certain buildings must always be considered in every hospital group; thus, to obtain the ideal lighting of the ward buildings the wards should run north-south, and the ideal condition for operating buildings is to have the operating rooms face the north, and the aim should always be to approximate this.

In the war hospital, especially in one near the front, greater facilities must be made for the reception of the patients; thus, the Receiving Building (Fig. 2) will accommodate a large number of stretchers at one time, and will allow for proper segregation and classification of the patients, the taking of the histories, etc. The Bathing Room adjoining is provided with high slab tubs. In this room the patient's clothes and effects are removed, which, after washing and fumigating, are deposited in the adjoining Patients' Effects Building, No. 3 on general plan.

As all buildings are connected by enclosed corridors, the patient can be taken, by stretcher or otherwise, to the operating building or to the ward, according to his condition.

The Operating Buildings (Fig. 3), two in number, for the general operating service, consist of thoroughly equipped suites of rooms with every convenience of a modern operating unit in a surgical hospital. The rectangular shaped building, made necessary by the type of construction adopted, does not interfere with the efficiency of the plan except, perhaps, that there is a superabundance of corridor. The operating rooms are provided with abundant light, by means of both windows and skylights. Between the two main operating rooms is the sterilizing room, and sterile water is brought to the scrub-up sinks in each operating room. The scrub-up sinks, while they are simple enameled sinks, are provided with the most approved elbow-action scrub-up devices. Steam sterilizers and blanket warmers, a complete X-ray suite, a plaster room and general utility are all provided.

For the units placed near the front, the two buildings, Nos. 4 and 5, would be needed, providing for ten operating tables.

The walls of the operating rooms are rendered smooth by an additional surface of enameled canvas, while the floors are cement.

A separate operating and treatment building is provided for the ear, nose and throat (Fig. 4); another for the eye (Fig. 5); and another for the dental and laboratory work (Fig. 6).

The Ward Building (Fig. 7), of which there are thirty-two in each unit, is much the same as that adopted by the French and English army. It consists of the ward of thirty-two beds and of a twenty-foot airing balcony at the south end. The ward itself is 22 feet wide, 102 feet long, and has twenty-four windows. These windows, occupying about thirty per cent. of the wall surface and opening from the top, afford the maximum of light and air.

In each ward there are six emergency exits. The side wall panels, hinged at bottom and opening out, form a ramp, down which the beds can be run in case of fire or other cause for quick exit. The walls, doors and roofs being double, these ward buildings are comfortable in both winter and summer.

The utilities consist of a linen room, a nurses' office, a toilet room, a surgical dressing room, a small serving kitchen, a small office for the military attendant, and an isolation room for a delirious or moribund patient.

In each group there are three Isolation Buildings (Fig. 8) for the care of communicable or contagious diseases. These provide for twenty-six patients each, and are planned on the so-called "Pasteur" or single room system. The ten single or isolation rooms are entered from the outside. Each room is self-contained, having a water closet and a sink with special elbow faucets, so that it will not be necessary for a patient to leave the room until he is convalescent. The service of food and attendance to the patient are from the inside corridor. Provision is made for linen, serving kitchen, utility room and discharge bath. The discharge bath is approached from the outside as well as from the inside. For convenience in bathing, a portable "slab" bath, which can be wheeled into any room, is provided, with water served from the sink and drained into the water closet bowl. The attendant can readily give the bath, clean the slab, and it will then be ready for the next patient.

There are two convalescent wards in each building.

For the care of the psychopathic and neurologic patient, two buildings, called the Neuro-Psychiatric Wards (Figs. 9 and 10), are provided. The more violent cases are confined in the portion set apart for them, consisting of isolation rooms, a day room, and a room with continuous-flow baths. This portion of the building is protected by wire guards to prevent the escape of patients. The milder cases of insanity are cared for in a different section of the building.

The building for the strictly neurological cases provides special bath and medical treatment rooms, as well as wards, day room and rest rooms.

For sick officers, two Officers' Ward Buildings are provided (Fig. 11)—one with wards and semi-private room, and one with private rooms and mess.

For the convalescent patients, about fifty per cent. of whom are ambulatory or walking patients, dining rooms or mess halls are planned; also, a central bath house. For recreation, the assembly hall or post exchange is provided.

So much for the buildings for the patients.

The administration and mechanical buildings occupy a most important part in each group.

In the Administration Building (Fig. 12) are, of course, the offices for administration, and they are much the same as in a civilian hospital. Headquarters for the commanding officer, secretaries, matron and pharmacist are provided, as well as postal and telegraph offices.

The commanding officer and chief surgeon are given a small house; the other officers are in a separate building. The female nurses have separate buildings, with single rooms for each nurse. Hospital Barracks house the enlisted men.

The Kitchen Building (Fig. 13) is worked out with great care, and contains the bakery, the bread room, the main kitchen and the scullery; also a complete ice plant for cooling refrigerators in this building and for the making of ice for the hospital. High pressure steam is used largely for cooking, and this is obtained from a nearby boiler plant.

The dish washing is accomplished in a small building (Fig. 14), situated between the kitchen and mess halls; this building serving as well for the housing of the food carts.

The process of serving food is simple; the orderly starting with his food cart first obtains his quota of hot dishes; then goes through the closed corridors to the kitchen, where he first picks up the bread required; next to the hot table to get the hot food, then for the dessert, and then through a closed corridor to the ward, where the food cart is used as a serving table, and the patient is reasonably sure of getting hot food.

The Laundry Building (Fig. 15) has been planned in reference to efficient work. The soiled clothes are entirely at one end, where, with modern machinery, they are sterilized, washed, dried, ironed, and folded, and then taken to a general storage room for distribution.

The construction of these buildings is simple—all of one story, built up of standard five-foot units. Notwithstanding that they will be of portable construction, with double walls, floors, and roofs, built in shops, transported to the war section and erected, they will be hygienic, easily cleaned, comfortable in winter and summer, and painted both inside and outside. The elevations and sections (Figs. 16 and 17) show the general type. Connections to these buildings are through enclosed corridors. The general appearance of the interior will be like the Rockefeller, a view of which is here shown (Fig 18). The reproduction of a few detail drawings will show the construction adopted and the simple standards used for plumbing fixtures.

The construction of the trusses is worthy of special study. The utilizing of available material, like the gusset plates at the junction of wall and roof and the section of channel iron in place of the usual turn buckle; the simplicity of erection; and the general pleasing appearance in the wards will be noted. The standard valve, which will be used on all sinks, bowls, and slop hoppers, is adapted for the surgeons' scrub-up with elbow valves and spray head, for bathing slabs with hose extension, and for general sinks throughout.

The heating system is so laid out with several small heating plants, that no large pipes will be required; in fact, a 3-inch pipe is the largest used outside the boiler houses.

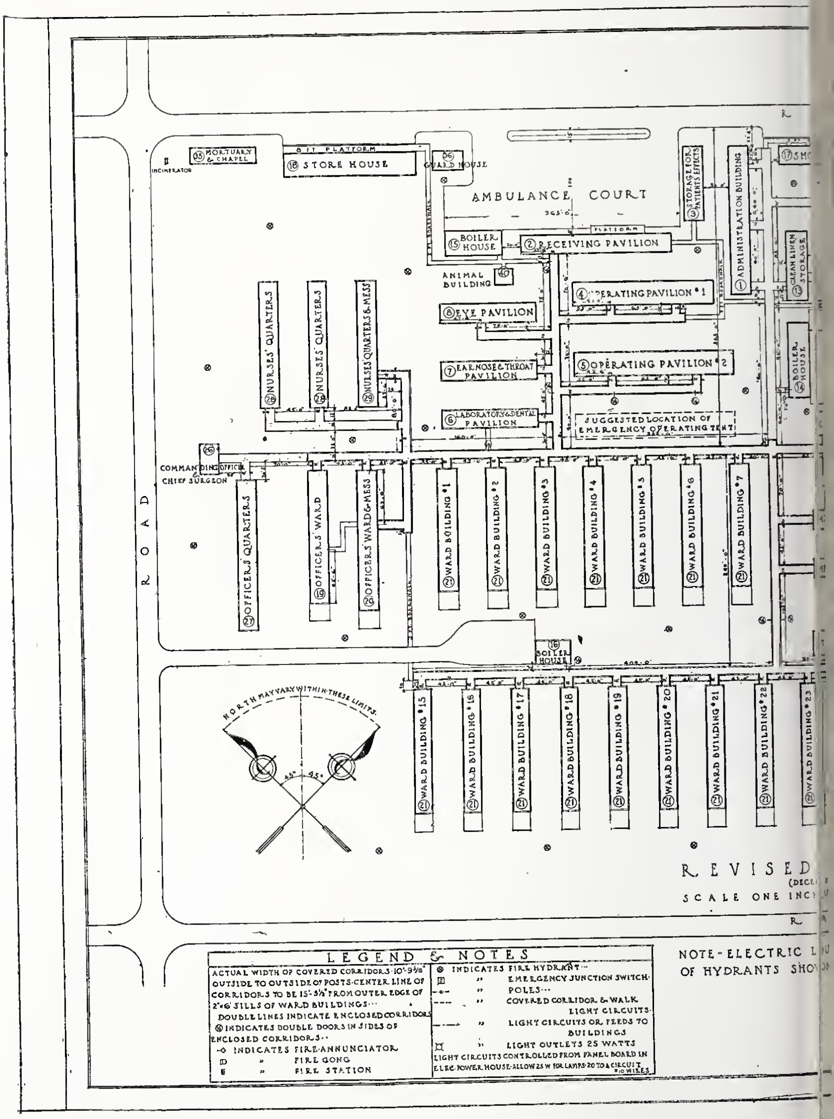


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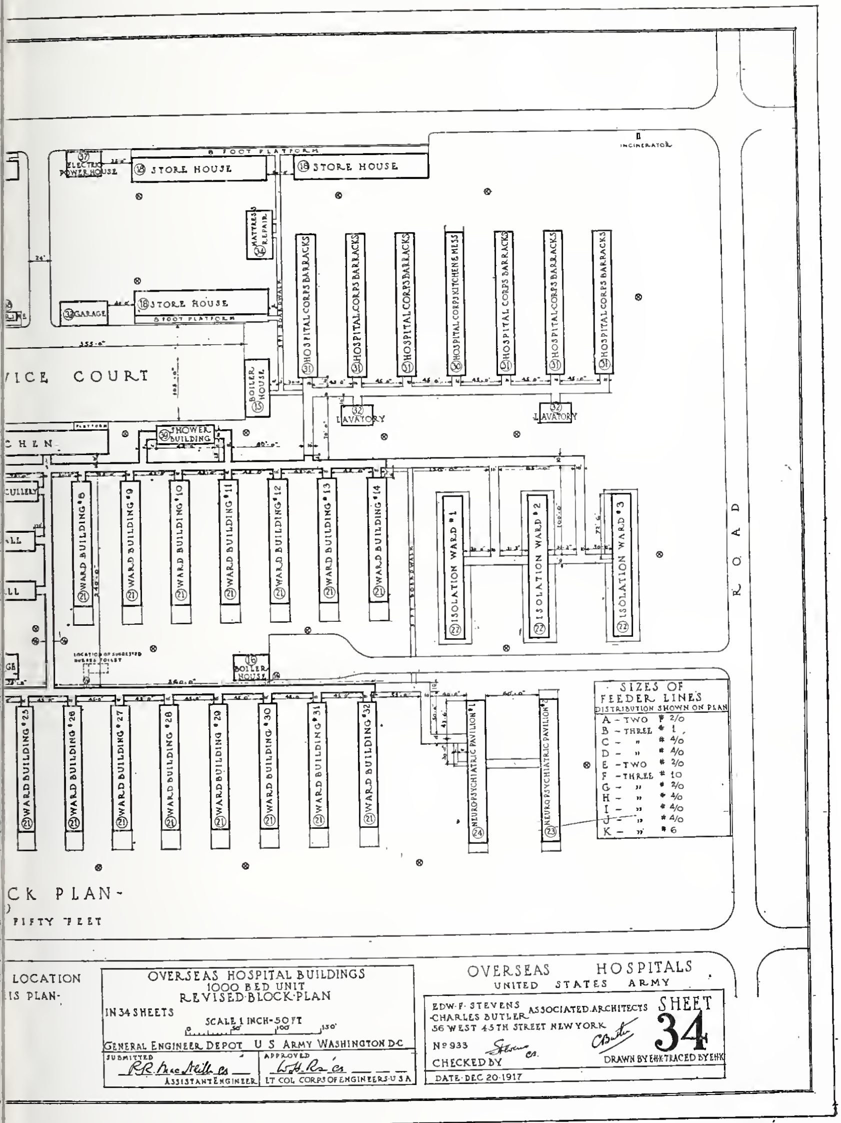
FIG. 1. BLOCK PLAN OF BUILDINGS IN 1000-BED UNIT—OVERSEAS HOSPITALS, U. S. ARMY. EDWARD F. STEVENS AND CHARLES BUTLER, ASSOCIATE ARCHITECTS.



SIZES OF
FEEDER LINES
DISTRIBUTION SHOWN ON PLAN

A -	TWO	# 2/0
B -	THREE	# 1
C -	"	# 4/0
D -	"	# 4/0
E -	TWO	# 2/0
F -	THREE	# 10
G -	"	# 2/0
H -	"	# 4/0
I -	"	# 4/0
J -	"	# 4/0
K -	"	# 6

OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
REVISED·BLOCK·PLAN
IN 34 SHEETS
SCALE 1 INCH-50 FT
0 50' 100' 150'
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D.C.
SUBMITTED R.R. MacNeill cs ASSISTANT ENGINEER
APPROVED W.H. Rose cs LT COL CORPS OF ENGINEERS U S A

OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW·F·STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
SHEET 34
Nº 933 Stevens cs. C Butler
CHECKED BY
DRAWN BY EHK TRACED BY EHK
DATE·DEC 20·1917

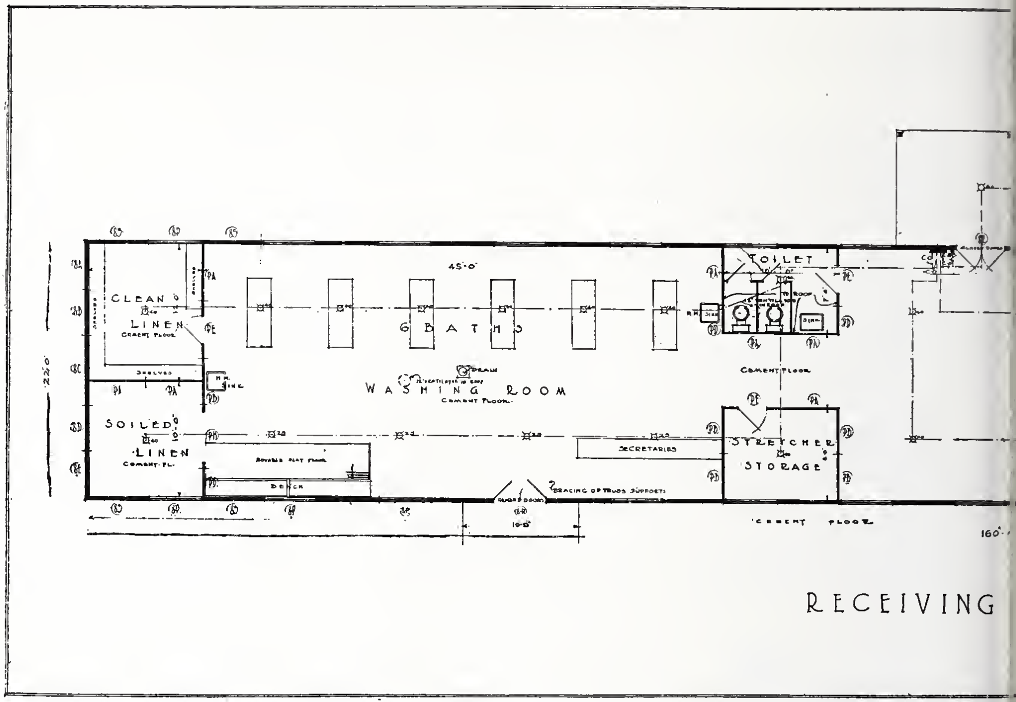

CLEAN
LINEN
CEMENT FLOOR
SHELVES
SOILED
LINEN
CEMENT FL.
6 BATHS
WASHING ROOM
CEMENT FLOOR.
45'-0"
22'-0"
SECRETARIES
BENCH
TOILET
CEMENT FLOOR
STRETCHER
STORAGE
CEMENT FLOOR
10'-0"
160'
RECEIVING

FIG. 2.

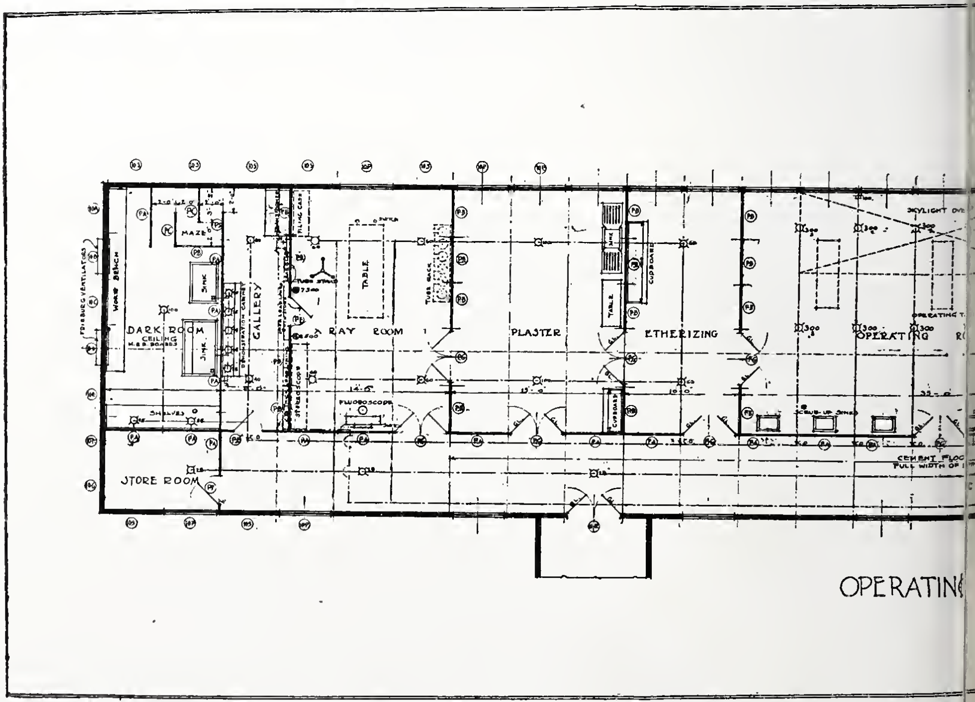
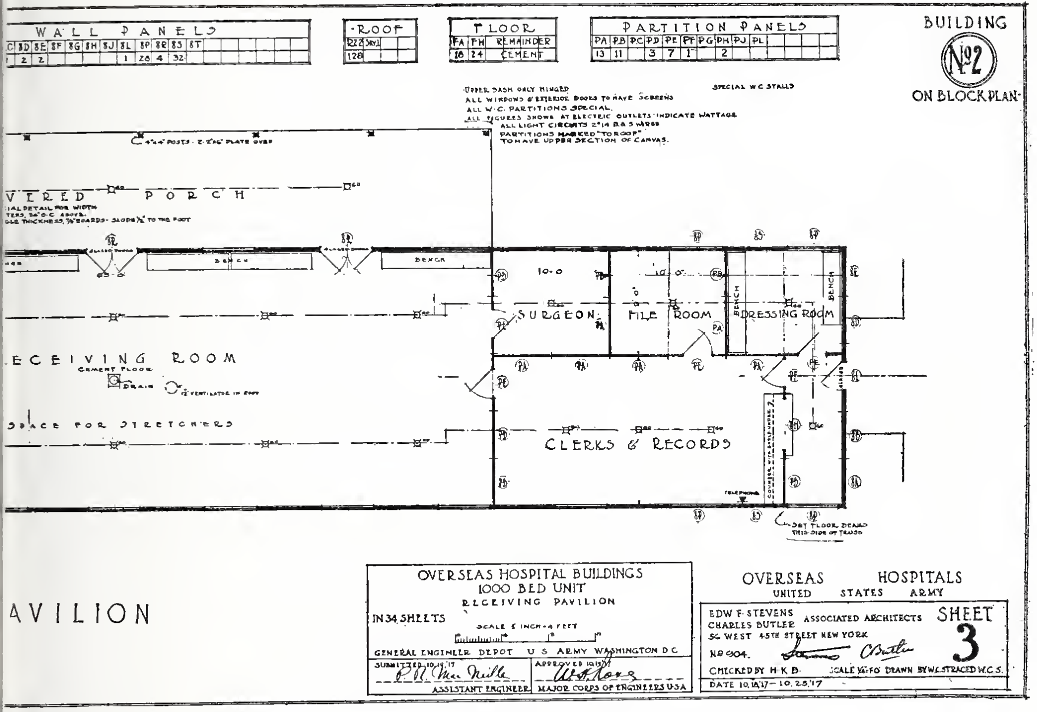
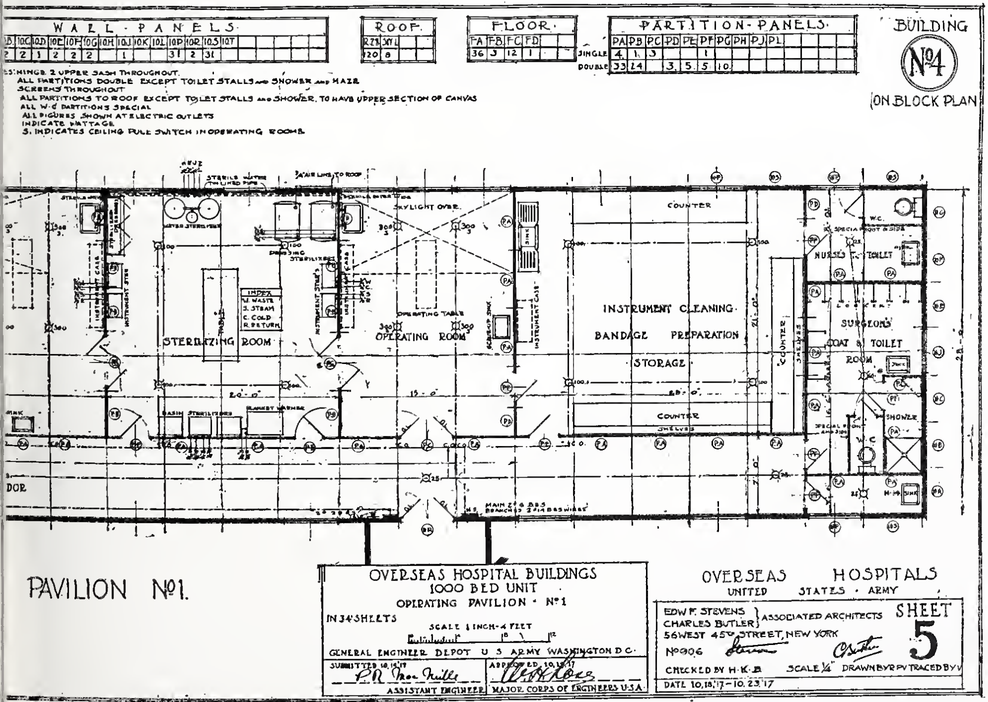

WORK BENCH
DARK ROOM
CEILING
MAZE
SINK
SHELVES
STORE ROOM
GALLERY
X RAY ROOM
TABLE
FILING CASE
STEREOSCOPE
FLUOROSCOPE
TUBE RACK
PLASTER
TABLE
SINK
CUPBOARD
ETHERIZING
CUPBOARD
OPERATING
SCRUB-UP SINKS
SKYLIGHT
CEMENT FLOOR
OPERATING

FIG. 3.


WALL PANELS
ROOF
FLOOR
FA FH REMAINDER
18 24 CEMENT
PARTITION PANELS
PA PB PC PD PE PF PG PH PJ PL
13 11 3 7 1 2
BUILDING №2 ON BLOCK PLAN
UPPER SASH ONLY HINGED
ALL WINDOWS & EXTERIOR DOORS TO HAVE SCREENS
ALL W.C. PARTITIONS SPECIAL.
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2#14 B.&S. WIRES
PARTITIONS MARKED "TO ROOF" TO HAVE UPPER SECTION OF CANVAS.
SPECIAL W.C. STALLS
4"x4" POSTS · 2-2"x6" PLATE OVER
COVERED PORCH
BENCH
SURGEON
FILE ROOM
DRESSING ROOM
RECEIVING ROOM
CEMENT FLOOR
DRAIN
SPACE FOR STRETCHERS
CLERKS & RECORDS
TELEPHONE
SET FLOOR BEAMS THIS SIDE OF TRUSS
PAVILION
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
RECEIVING PAVILION
IN 34 SHEETS
SCALE ⅛ INCH = 4 FEET
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D.C.
SUBMITTED 10.19.'17
APPROVED 10.15.'17
ASSISTANT ENGINEER
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS UNITED STATES ARMY
EDW F. STEVENS
CHARLES BUTLER ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
SHEET 3
Nº 904
CHECKED BY H.K.B.
DATE 10.18.'17 - 10.25.'17


WALL PANELS
10B 10C 10D 10E 10F 10G 10H 10J 10K 10L 10P 10R 10S 10T
2 2 1 2 2 2 1 31 2 31
ROOF
R23 SKYL
120 8
FLOOR
FA FB FC FD
36 3 12 1
PARTITION PANELS
PA PB PC PD PE PF PG PH PJ PL
SINGLE 4 1 3 1
DOUBLE 33 14 3 5 5 10
BUILDING №4 ON BLOCK PLAN
HINGE 2 UPPER SASH THROUGHOUT.
ALL PARTITIONS DOUBLE EXCEPT TOILET STALLS AND SHOWER AND HAZE
SCREENS THROUGHOUT
ALL PARTITIONS TO ROOF EXCEPT TOILET STALLS AND SHOWER, TO HAVE UPPER SECTION OF CANVAS
ALL W.C. PARTITIONS SPECIAL
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
S. INDICATES CEILING PULL SWITCH IN OPERATING ROOMS
STERILE WATER TIN LINED PIPE
¾" AIR LINE TO ROOF
SKYLIGHT OVER.
STERILIZING ROOM
INDEX
W. WASTE
S. STEAM
C. COLD
R. RETURN
OPERATING TABLE
OPERATING ROOM
INSTRUMENT CASE
INSTRUMENT CLEANING
BANDAGE PREPARATION
STORAGE
COUNTER
SHELVES
NURSES TOILET
SURGEONS COAT & TOILET ROOM
SHOWER
W.C.
20'-0"
15'-0"
25'-0"
MAIN 2#6 B&S BRANCHES 2#14 B&S WIRES
PAVILION Nº1.
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
OPERATING PAVILION · Nº1
IN 34 SHEETS
SCALE ⅛ INCH = 4 FEET
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D.C.
SUBMITTED 10.15.'17
APPROVED 10.15.'17
ASSISTANT ENGINEER
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS UNITED STATES · ARMY
EDW F. STEVENS
CHARLES BUTLER ASSOCIATED ARCHITECTS
56 WEST 45TH STREET, NEW YORK
SHEET 5
Nº 906
CHECKED BY H.K.B.
SCALE ¼"
DATE 10.18.'17 - 10.23.'17

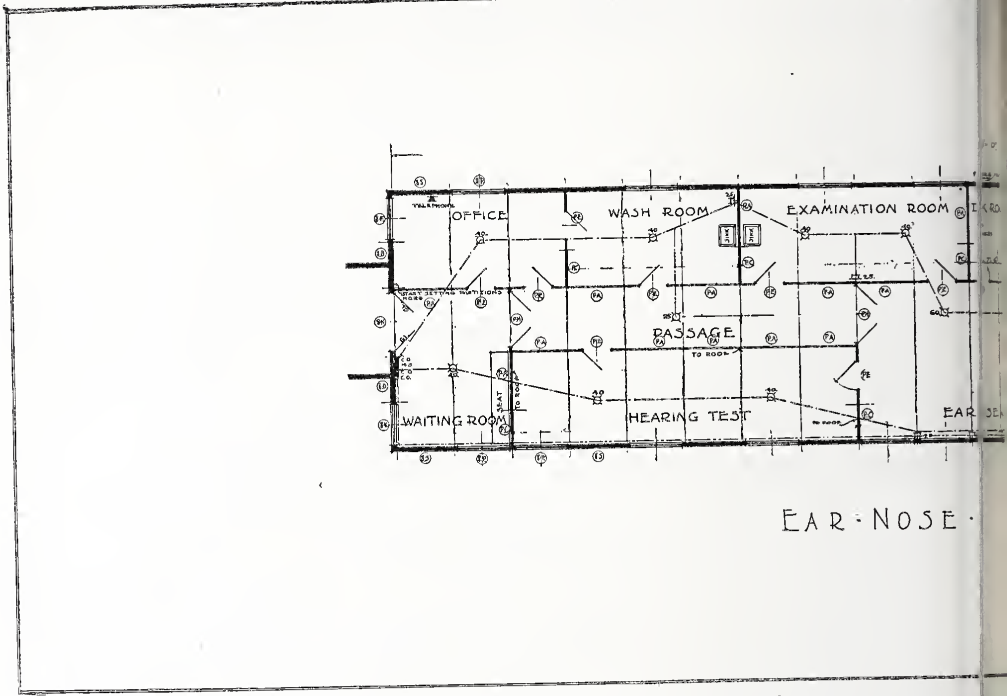

TELEPHONE
OFFICE
WASH ROOM
EXAMINATION ROOM
SINK
START SETTING PARTITIONS HERE
PASSAGE
TO ROOF
SEAT
WAITING ROOM
HEARING TEST
EAR
EAR·NOSE·

FIG. 4.

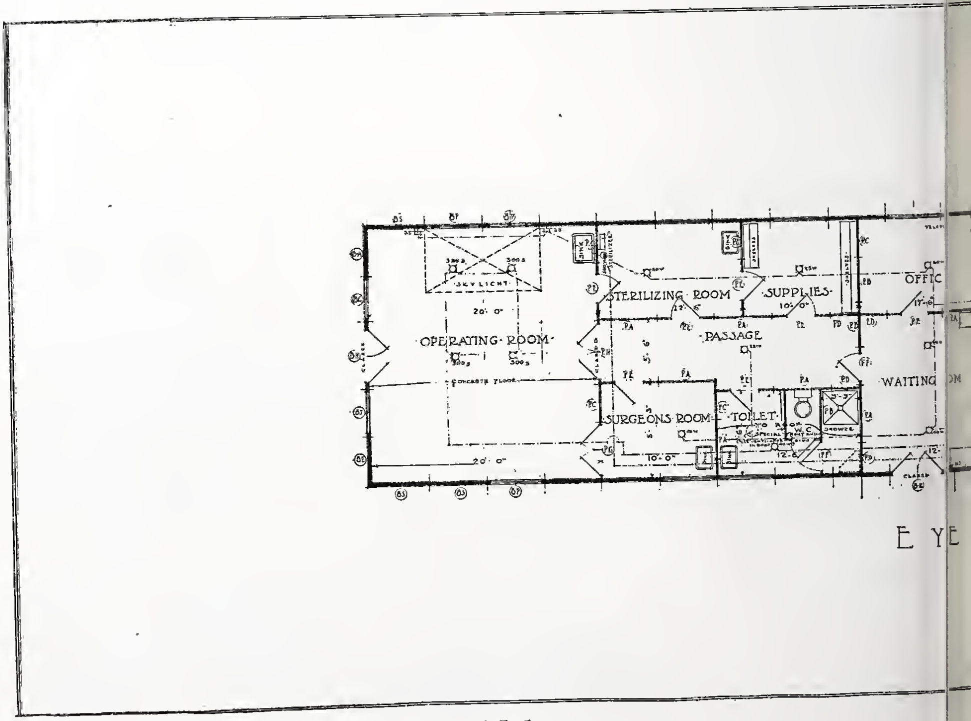
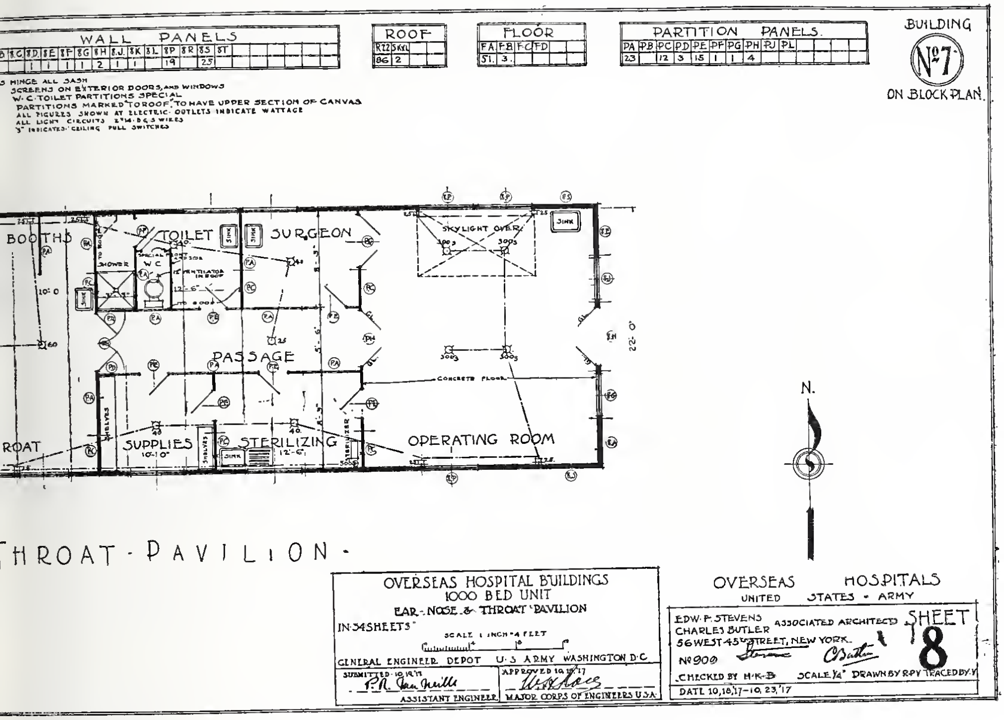
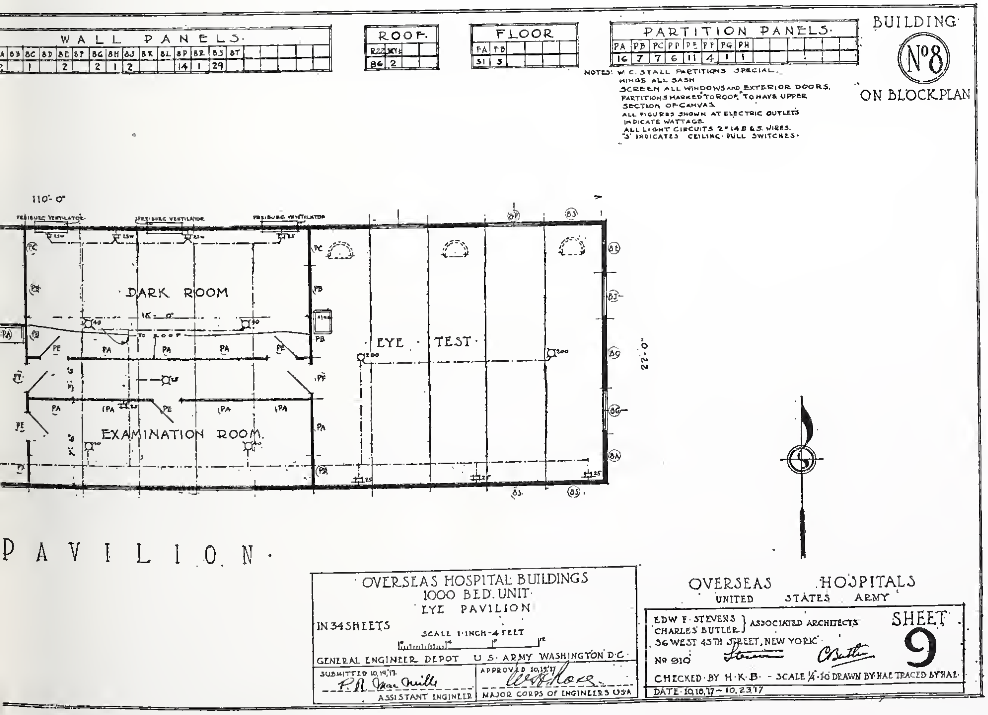

SKY LIGHT
20'·0"
OPERATING·ROOM·
CONCRETE FLOOR
STERILIZING·ROOM
12'·6"
SUPPLIES
10'·0"
OFFIC
PASSAGE
WAITING
SURGEONS·ROOM
TOILET
W.C.
SHOWER
SINK
10'·0"
12'·6"
20'·0"
EYE

FIG. 5.


WALL PANELS
8C 8D 8E 8F 8G 8H 8J 8K 8L 8P 8R 8S 8T
1 1 1 1 2 1 1 19 25
ROOF
R22 SKYL
86 2
FLOOR
FA FB FC FD
51 3
PARTITION PANELS
PA PB PC PD PE PF PG PH PJ PL
23 12 3 15 1 1 4
BUILDING
Nº7
ON BLOCK PLAN
HINGE ALL SASH
SCREENS ON EXTERIOR DOORS, AND WINDOWS
W. C. TOILET PARTITIONS SPECIAL
PARTITIONS MARKED "TO ROOF" TO HAVE UPPER SECTION OF CANVAS
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2 #14 B & S WIRES
"S" INDICATES CEILING PULL SWITCHES
BOOTHS
TOILET
SURGEON
SHOWER
W C
SINK
SKYLIGHT OVER
PASSAGE
SUPPLIES
10'-0"
STERILIZING
12'-6"
SHELVES
OPERATING ROOM
CONCRETE FLOOR
ROAT
22'-0"
N.
THROAT · PAVILION ·
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
EAR - NOSE - & - THROAT PAVILION
IN 34 SHEETS
SCALE 1 INCH = 4 FEET
GENERAL ENGINEER DEPOT U. S. ARMY WASHINGTON D.C.
SUBMITTED 10.19.17
P. R. MacNeille
ASSISTANT ENGINEER
APPROVED 10.19.17
W. H. Hoag
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS
UNITED STATES - ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45th STREET, NEW YORK
Nº 909
Stevens
C Butler
SHEET
8
CHECKED BY H.K.B. SCALE 1/4" DRAWN BY R.P.Y. TRACED BY
DATE 10,18,'17 - 10, 23, '17


WALL PANELS
8B 8C 8D 8E 8F 8G 8H 8J 8K 8L 8P 8R 8S 8T
1 2 2 1 2 14 1 29
ROOF
R22 SKYL
86 2
FLOOR
FA FB
51 3
PARTITION PANELS
PA PB PC PD PE PF PG PH
16 7 7 6 11 4 1 1
NOTES: W. C. STALL PARTITIONS SPECIAL.
HINGE ALL SASH
SCREEN ALL WINDOWS AND EXTERIOR DOORS.
PARTITIONS MARKED "TO ROOF" TO HAVE UPPER SECTION OF CANVAS
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2 #14 B & S WIRES.
"S" INDICATES CEILING PULL SWITCHES.
BUILDING
Nº8
ON BLOCK PLAN
110'-0"
FREIBURG VENTILATOR
DARK ROOM
16'-0"
TO ROOF
EYE · TEST ·
EXAMINATION ROOM
22'-0"
PAVILION ·
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
EYE PAVILION
IN 34 SHEETS
SCALE 1 INCH = 4 FEET
GENERAL ENGINEER DEPOT U. S. ARMY WASHINGTON D.C.
SUBMITTED 10.19.17
P. R. MacNeille
ASSISTANT ENGINEER
APPROVED 10.19.17
W. H. Hoag
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET, NEW YORK
Nº 910
Stevens
C Butler
SHEET
9
CHECKED BY H.K.B. - SCALE 1/4" - 1'0" DRAWN BY H.A.E. TRACED BY H.A.E.
DATE 10.18.17 - 10.23.17

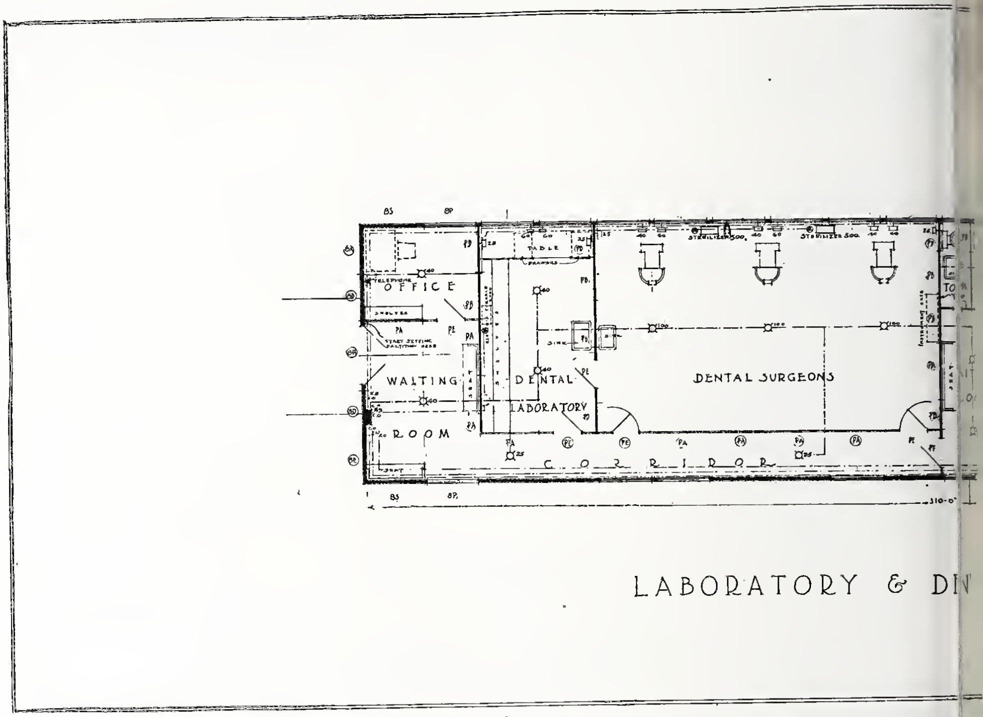

OFFICE
TELEPHONE
SHELVES
WAITING ROOM
SEAT
DENTAL LABORATORY
TABLE
DRAWERS
SINK
DENTAL SURGEONS
STERILIZER 500
CORRIDOR
310-0"
LABORATORY & DI

FIG. 6.

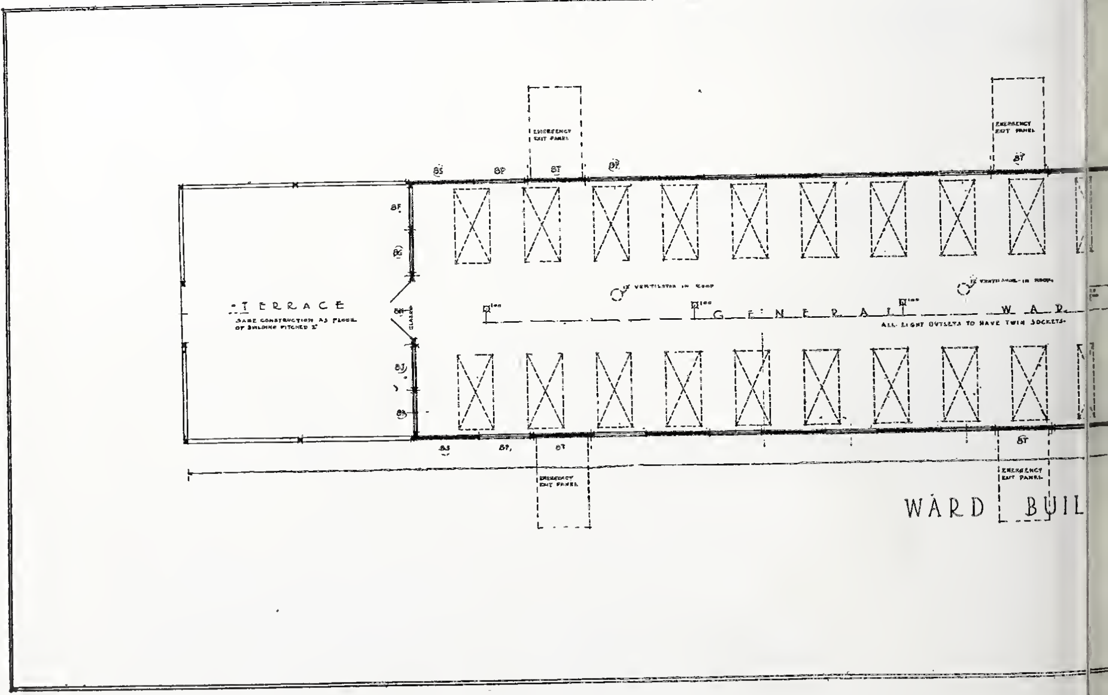
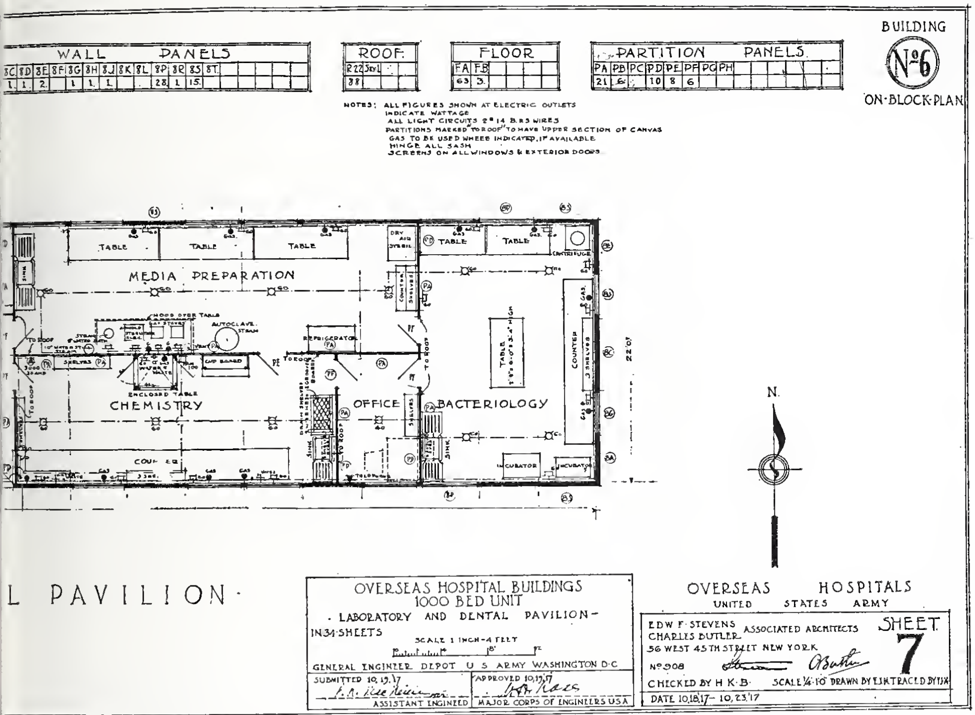
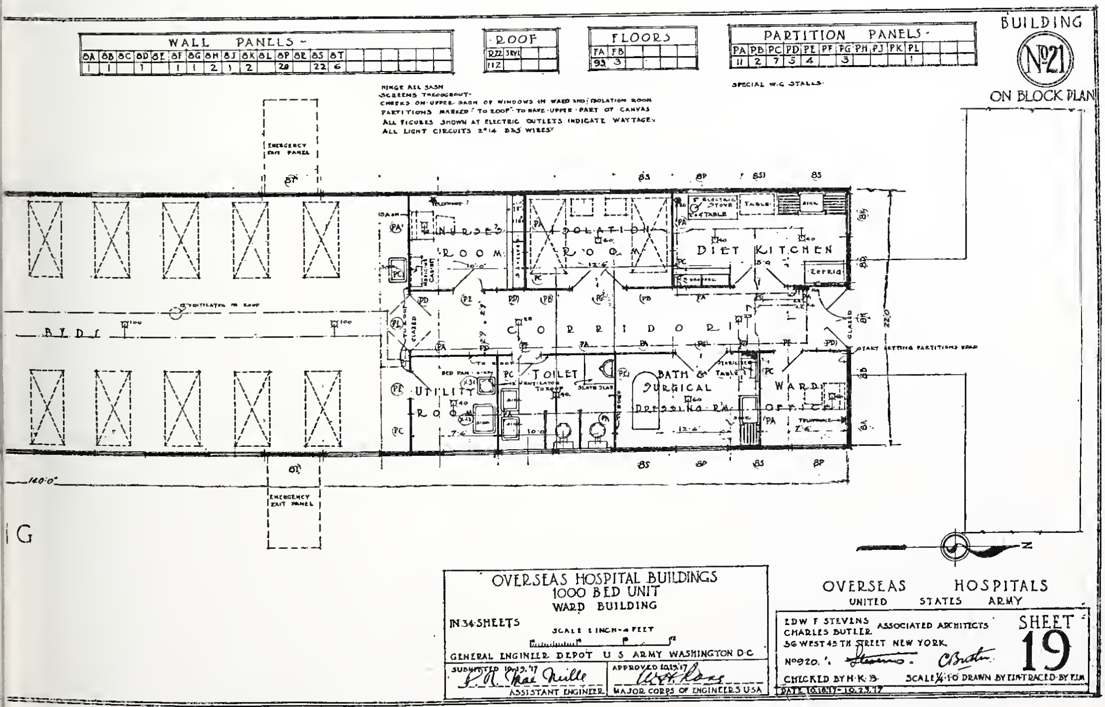

TERRACE
SAME CONSTRUCTION AS FLOOR OF BUILDING PITCHED 2"
EMERGENCY EXIT PANEL
VENTILATOR IN ROOF
GENERAL WAR
ALL LIGHT OUTLETS TO HAVE TWIN SOCKETS.
WARD BUIL

FIG. 7.


WALL PANELS
ROOF
FLOOR
PARTITION PANELS
BUILDING
Nº6
ON·BLOCK·PLAN
NOTES: ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2 # 14 B.&S WIRES
PARTITIONS MARKED "TO ROOF" TO HAVE UPPER SECTION OF CANVAS
GAS TO BE USED WHERE INDICATED, IF AVAILABLE
HINGE ALL SASH
SCREENS ON ALL WINDOWS & EXTERIOR DOORS
MEDIA PREPARATION
CHEMISTRY
OFFICE
BACTERIOLOGY
TABLE
AUTOCLAVE
REFRIGERATOR
CUP BOARD
SHELVES
COUNTER
INCUBATOR
SINK
N.
L PAVILION·
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
· LABORATORY AND DENTAL PAVILION ·
IN 34 SHEETS
SCALE 1 INCH=4 FEET
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D·C
SUBMITTED 10.19.17
ASSISTANT ENGINEER
APPROVED 10.19.17
MAJOR CORPS OF ENGINEERS USA
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW F STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
Nº 908
SHEET
7
CHECKED BY H·K·B·
SCALE ¼"=1'0"
DRAWN BY E.J.H. TRACED BY J.J.K.
DATE 10.18.17 – 10.23.17


WALL PANELS
ROOF
FLOORS
PARTITION PANELS
SPECIAL W.C. STALLS
BUILDING
Nº21
ON BLOCK PLAN
HINGE ALL SASH
SCREENS THROUGHOUT
CHECKS ON UPPER SASH OF WINDOWS IN WARD AND ISOLATION ROOM
PARTITIONS MARKED "TO ROOF" TO HAVE UPPER PART OF CANVAS
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2 # 14 B&S WIRES
EMERGENCY EXIT PANEL
BEDS
NURSES ROOM
ISOLATION ROOM
DIET KITCHEN
CORRIDOR
UTILITY ROOM
TOILET
BATH & SURGICAL DRESSING R'M
WARD OFFICE
140'-0"
G
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
WARD BUILDING
IN 34 SHEETS
SCALE 1 INCH=4 FEET
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D·C
SUBMITTED 10.19.17
ASSISTANT ENGINEER
APPROVED 10.19.17
MAJOR CORPS OF ENGINEERS USA
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW F STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
Nº 920
SHEET
19
CHECKED BY H·K·B·
SCALE ¼"=1'0"
DRAWN BY E.J.H. TRACED BY F.J.M.
DATE 10.18.17 – 10.23.17

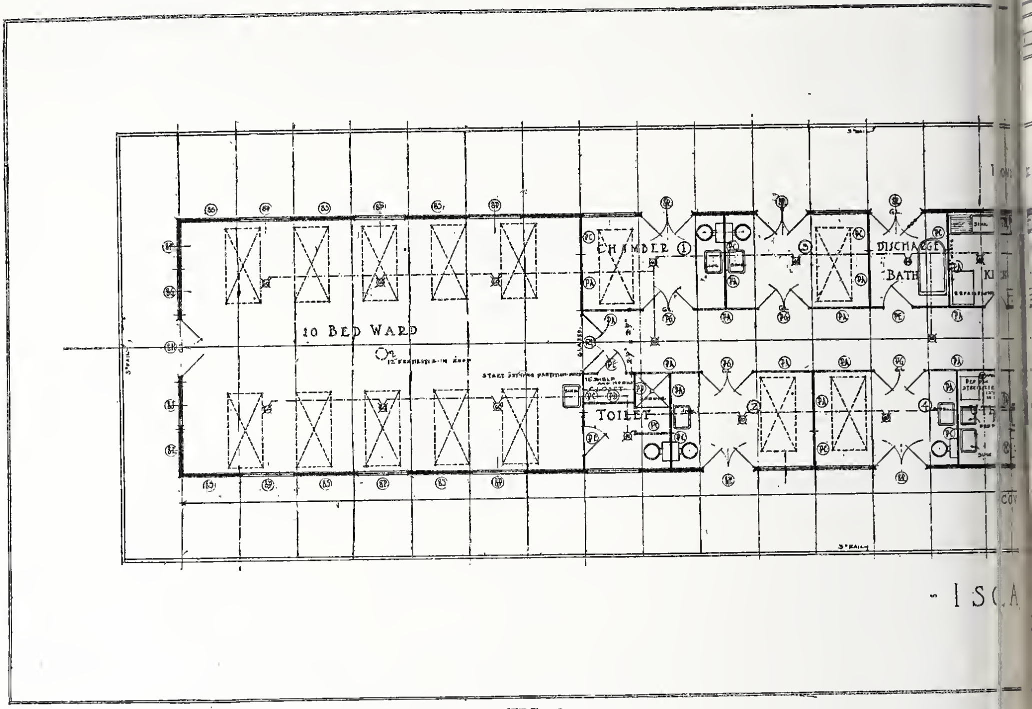

10 BED WARD
CHAMBER ①
DISCHARGE
BATH
TOILET
I S

FIG. 8.

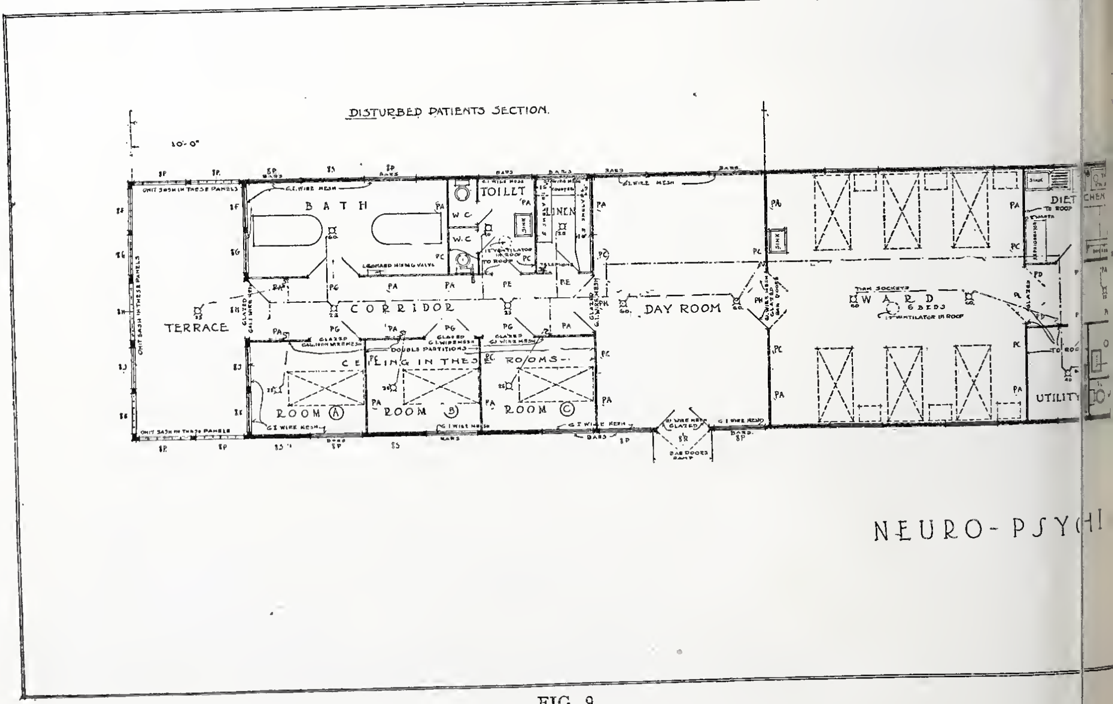
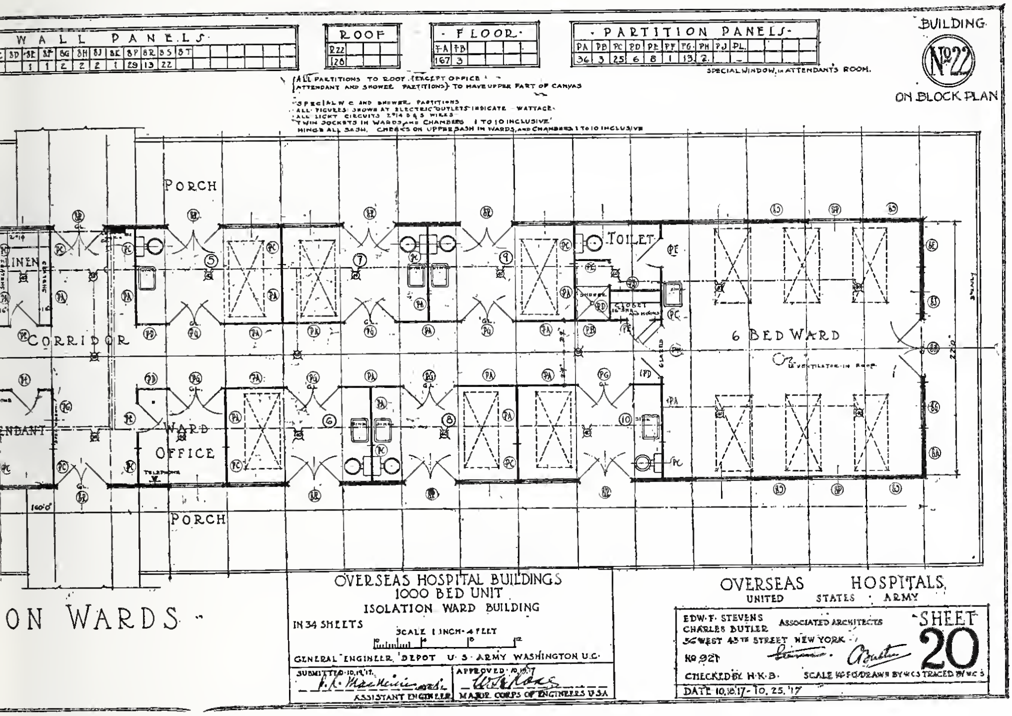
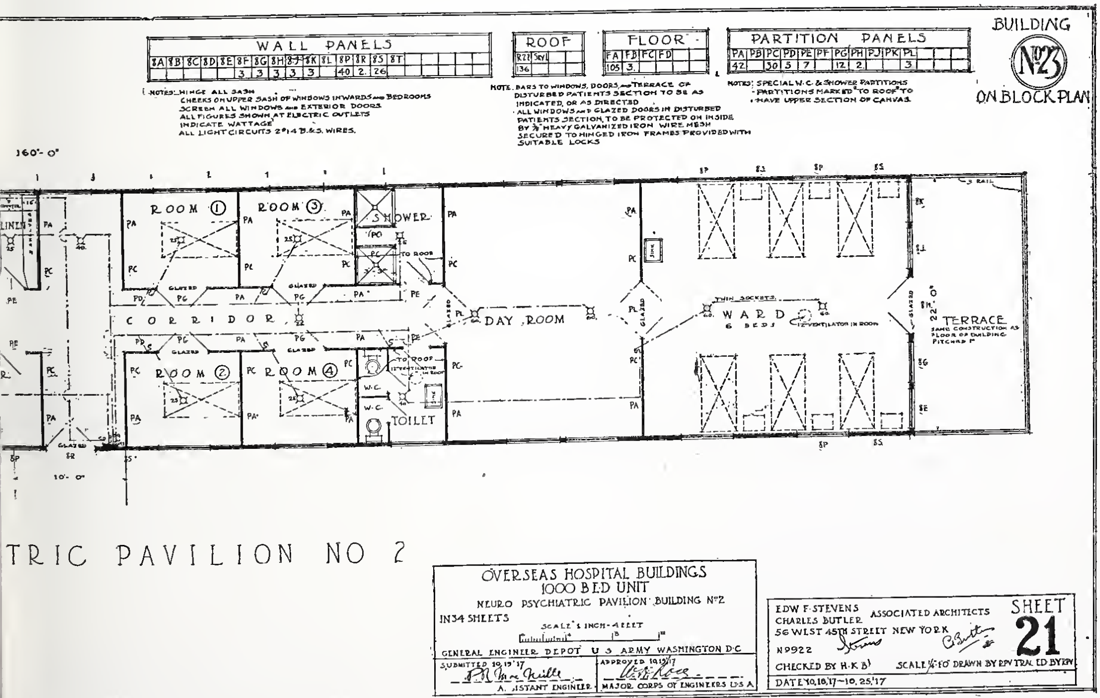

DISTURBED PATIENTS SECTION.
10'-0"
BATH
TOILET
W.C
W.C
LINEN
CORRIDOR
TERRACE
DAY ROOM
WARD
6 BEDS
DIET
UTILITY
CEILING IN THESE ROOMS
ROOM Ⓐ
ROOM Ⓑ
ROOM Ⓒ
NEURO-PSY

FIG. 9.


WALL PANELS
ROOF
FLOOR
PARTITION PANELS
BUILDING
Nº 22
ON BLOCK PLAN
PORCH
LINEN
CORRIDOR
TOILET
6 BED WARD
WARD OFFICE
PORCH
ON WARDS
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
ISOLATION WARD BUILDING
IN 34 SHEETS
SCALE 1 INCH = 4 FEET
GENERAL ENGINEER DEPOT U.S. ARMY WASHINGTON D.C.
SUBMITTED 10.19.17
ASSISTANT ENGINEER
APPROVED 10.19.17
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
Nº 9921
CHECKED BY H.K.B.
SHEET
20
DATE 10.18.17 - 10.25.17


WALL PANELS
ROOF
FLOOR
PARTITION PANELS
BUILDING
Nº 23
ON BLOCK PLAN
160'-0"
ROOM ①
ROOM ③
SHOWER
CORRIDOR
DAY ROOM
WARD
6 BEDS
TERRACE
ROOM ②
ROOM ④
TOILET
10'-0"
TRIC PAVILION NO 2
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
NEURO PSYCHIATRIC PAVILION BUILDING Nº 2
IN 34 SHEETS
SCALE 1 INCH = 4 FEET
GENERAL ENGINEER DEPOT U.S. ARMY WASHINGTON D.C.
SUBMITTED 10.19.17
ASSISTANT ENGINEER
APPROVED 10.19.17
MAJOR CORPS OF ENGINEERS U.S.A.
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
Nº 9922
CHECKED BY H.K.B.
SHEET
21
DATE 10.18.17 - 10.25.17

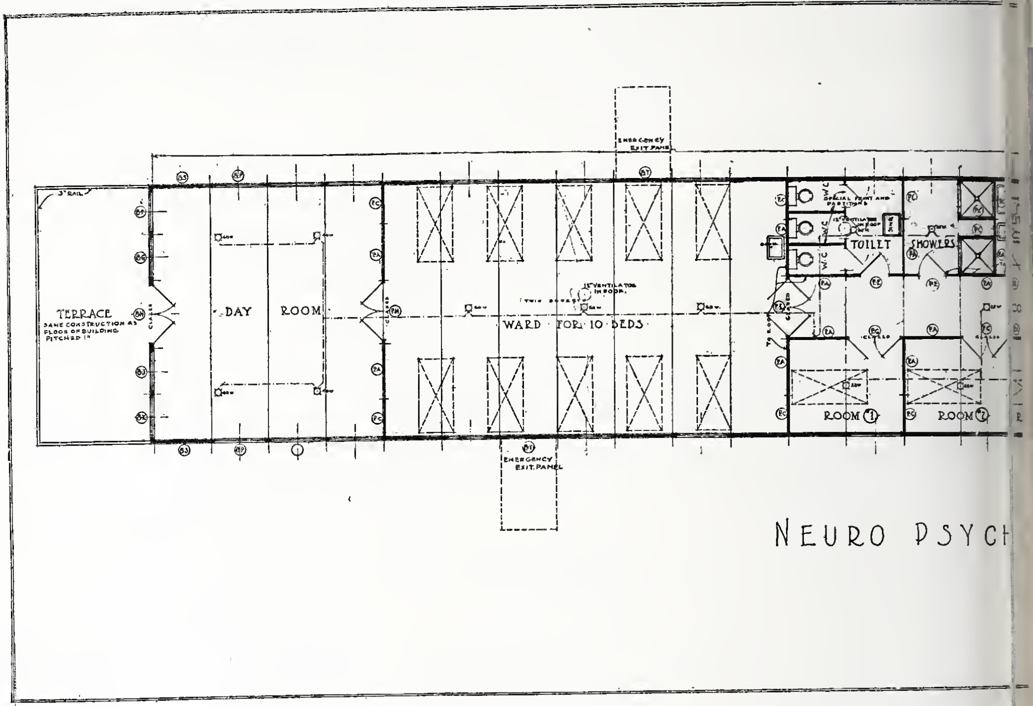

EMERGENCY EXIT PANEL
3" RAIL
TERRACE
SAME CONSTRUCTION AS FLOOR OF BUILDING PITCHED 1"
CLOSET
DAY ROOM
15" VENTILATOR IN ROOF.
TWIN SOCKET
WARD FOR 10 BEDS
EMERGENCY EXIT PANEL
W.C.
W.C.
SPECIAL FRONT AND PARTITIONS
12" VENTILATOR IN ROOF
TOILET
SHOWERS
CLOSET
CLOSET
CLOSET
ROOM ①
ROOM ②
NEURO PSYCH

FIG. 10.

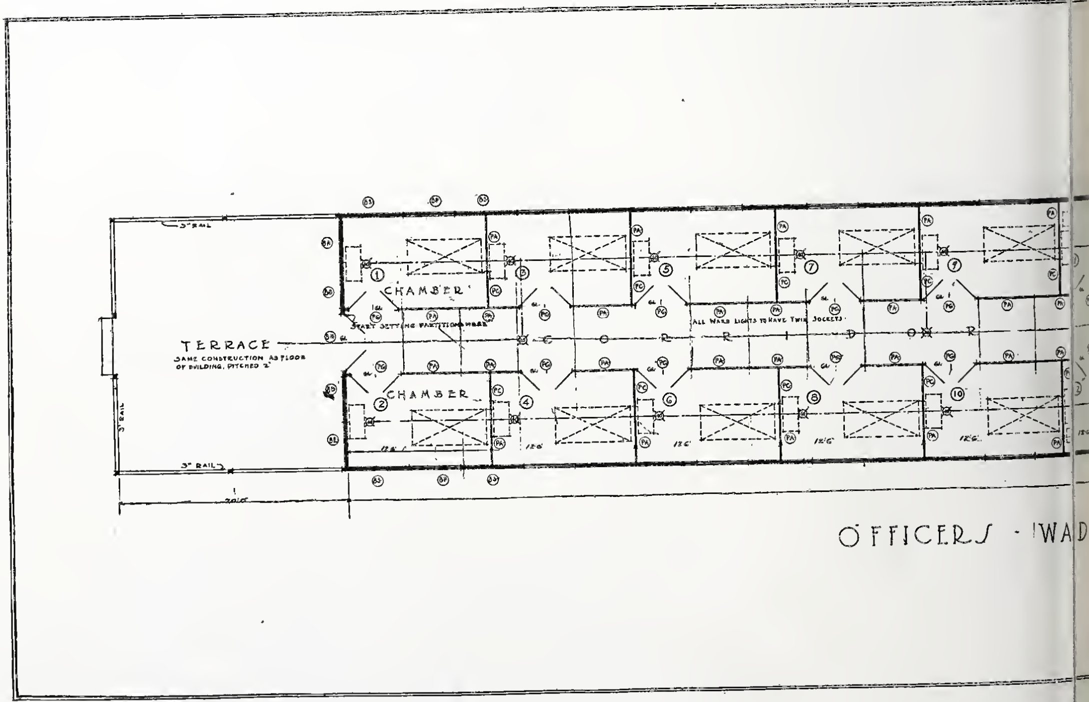
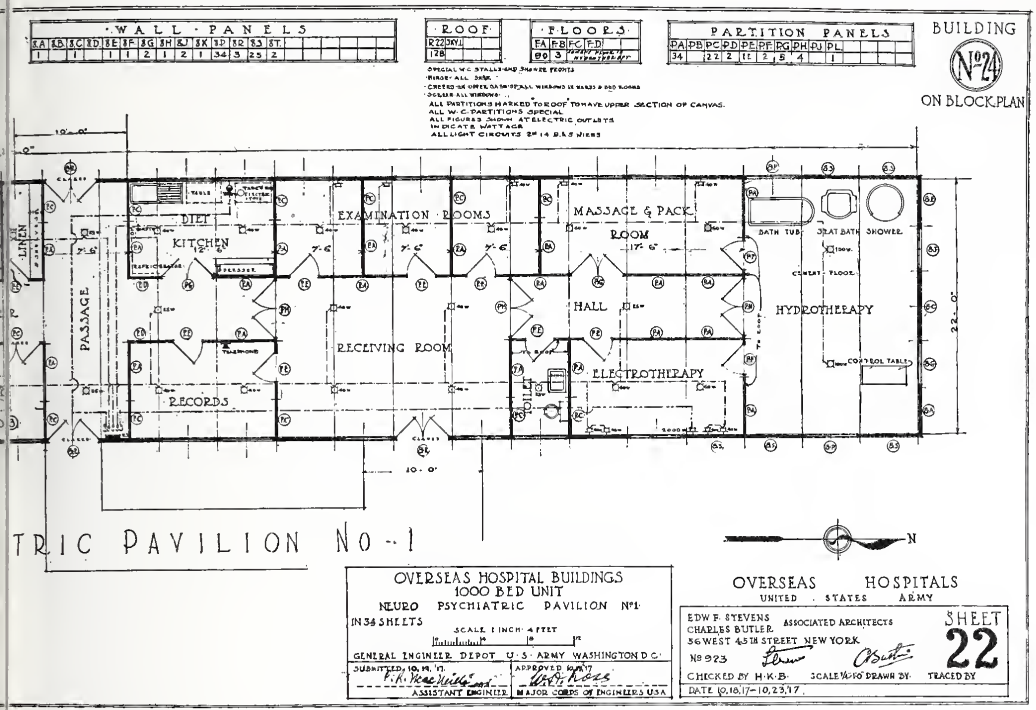
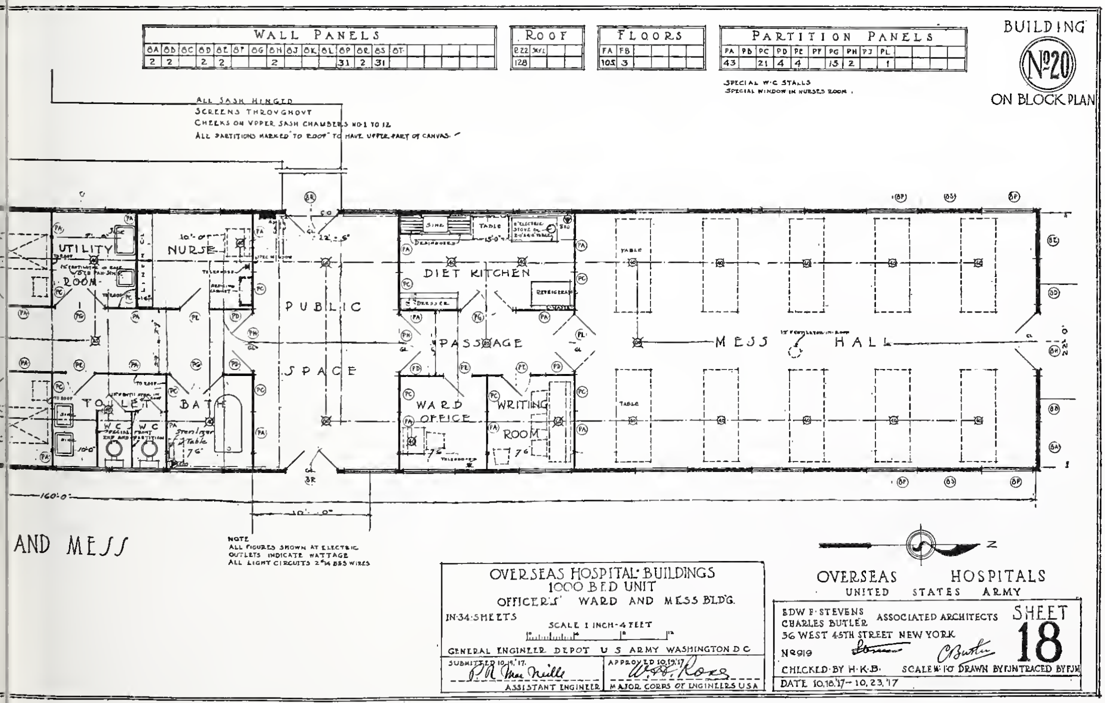

3" RAIL
TERRACE
SAME CONSTRUCTION AS FLOOR OF BUILDING, PITCHED 2"
3" RAIL
3" RAIL
START SETTING PARTITIONS HERE
CHAMBER
CHAMBER
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
CORRIDOR
ALL WARD LIGHTS TO HAVE TWIN SOCKETS.
12'6"
12'6"
12'6"
12'6"
12'6"
OFFICERS · WAD

FIG. 11.


WALL PANELS
ROOF
FLOORS
PARTITION PANELS
BUILDING
Nº24
ON BLOCK PLAN
SPECIAL W.C. STALLS AND SHOWER FRONTS
ALL PARTITIONS MARKED TO ROOF TO HAVE UPPER SECTION OF CANVAS.
ALL W.C. PARTITIONS SPECIAL
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2# 14 B.&S. WIRES
LINEN
PASSAGE
DIET KITCHEN
RECORDS
EXAMINATION ROOMS
RECEIVING ROOM
MASSAGE & PACK ROOM
HALL
TOILET
ELECTROTHERAPY
BATH TUB
SEAT BATH
SHOWER
HYDROTHERAPY
CONTROL TABLE
22'-0"
10'-0"
TRIC PAVILION No-1
N
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
NEURO PSYCHIATRIC PAVILION Nº1
IN 34 SHEETS
SCALE 1 INCH-4 FEET
GENERAL ENGINEER DEPOT U.S. ARMY WASHINGTON D.C.
SUBMITTED 10, 19, '17.
ASSISTANT ENGINEER
APPROVED 10.19.17
W.A. Ross
MAJOR CORPS OF ENGINEERS USA
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
Nº 923
SHEET 22
CHECKED BY H.K.B.
SCALE 1/4"-1'0"
DRAWN BY
TRACED BY
DATE 10,18,17-10,23,17


WALL PANELS
ROOF
FLOORS
PARTITION PANELS
BUILDING
Nº20
ON BLOCK PLAN
SPECIAL W.C. STALLS
SPECIAL WINDOW IN NURSES ROOM
ALL SASH HINGED
SCREENS THROUGHOUT
CHECKS ON UPPER SASH CHAMBERS NO 1 TO 12
ALL PARTITIONS MARKED "TO ROOF" TO HAVE UPPER PART OF CANVAS.
UTILITY ROOM
NURSE
TOILET
BATH
W.C.
PUBLIC SPACE
DIET KITCHEN
PASSAGE
WARD OFFICE
WRITING ROOM
MESS HALL
TABLE
160'-0"
10'-0"
AND MESS
NOTE
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2# 14 B&S WIRES
N
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
OFFICER'S WARD AND MESS BLD'G.
IN 34 SHEETS
SCALE 1 INCH-4 FEET
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D C
SUBMITTED 10.19.'17.
P.R. MacNeille
ASSISTANT ENGINEER
APPROVED 10.19.'17
W.A. Ross
MAJOR CORPS OF ENGINEERS USA
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
Nº919
C Butler
SHEET 18
CHECKED BY H.K.B.
SCALE ¼"-1'0"
DRAWN BY FJN
TRACED BY FJM
DATE 10.18.'17-10.23.'17

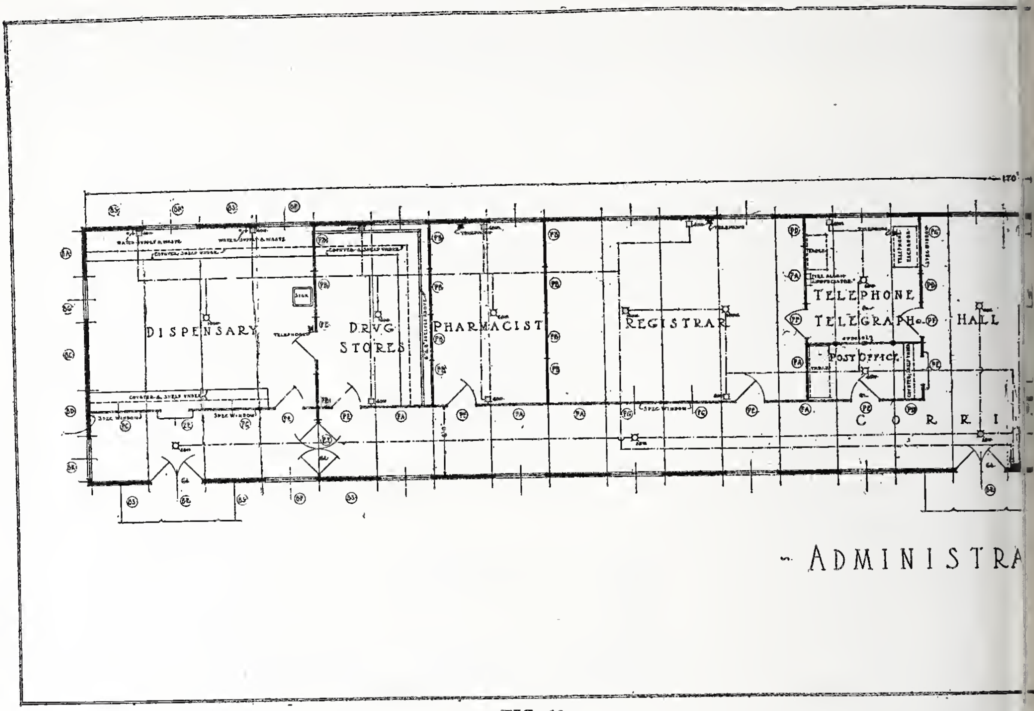

DISPENSARY
DRUG STORES
PHARMACIST
REGISTRAR
TELEPHONE
TELEGRAPH
POST OFFICE
HALL
CORRI
ADMINISTRA

FIG. 12.

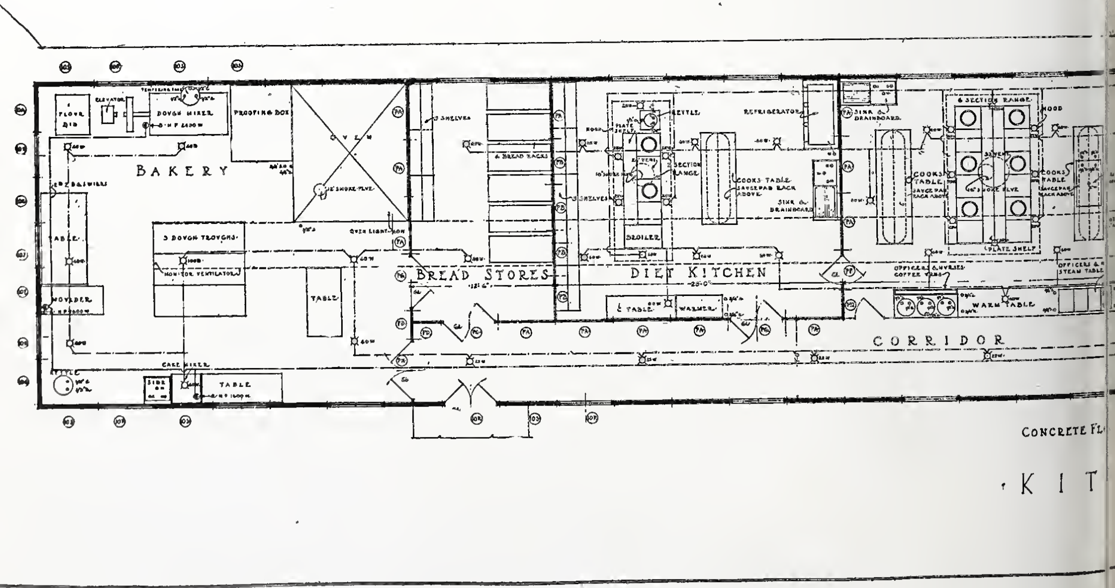
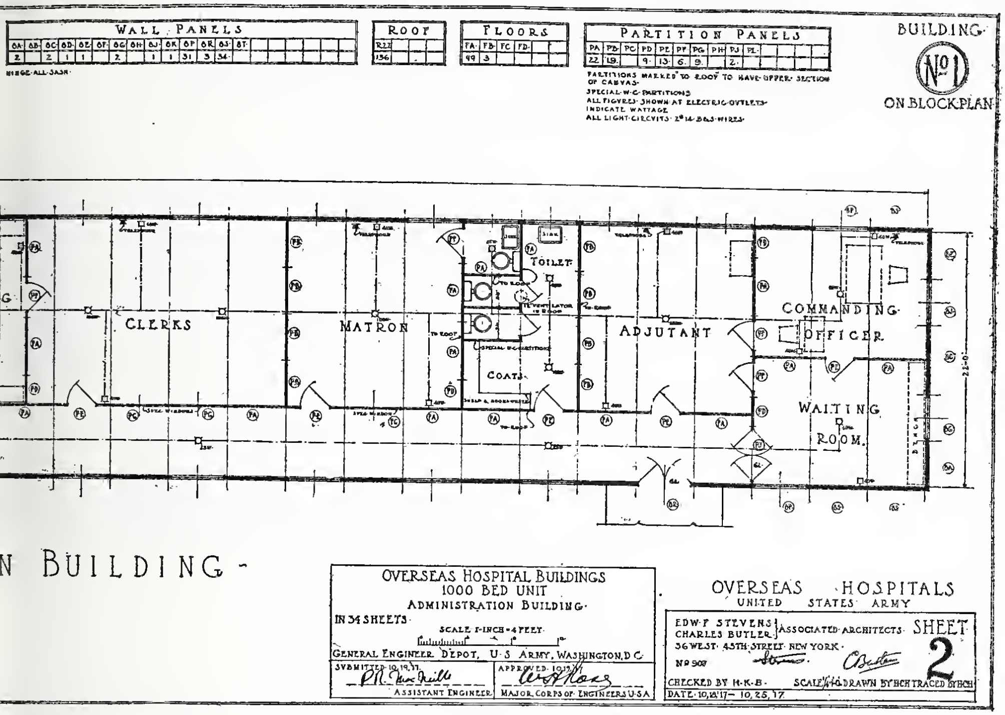
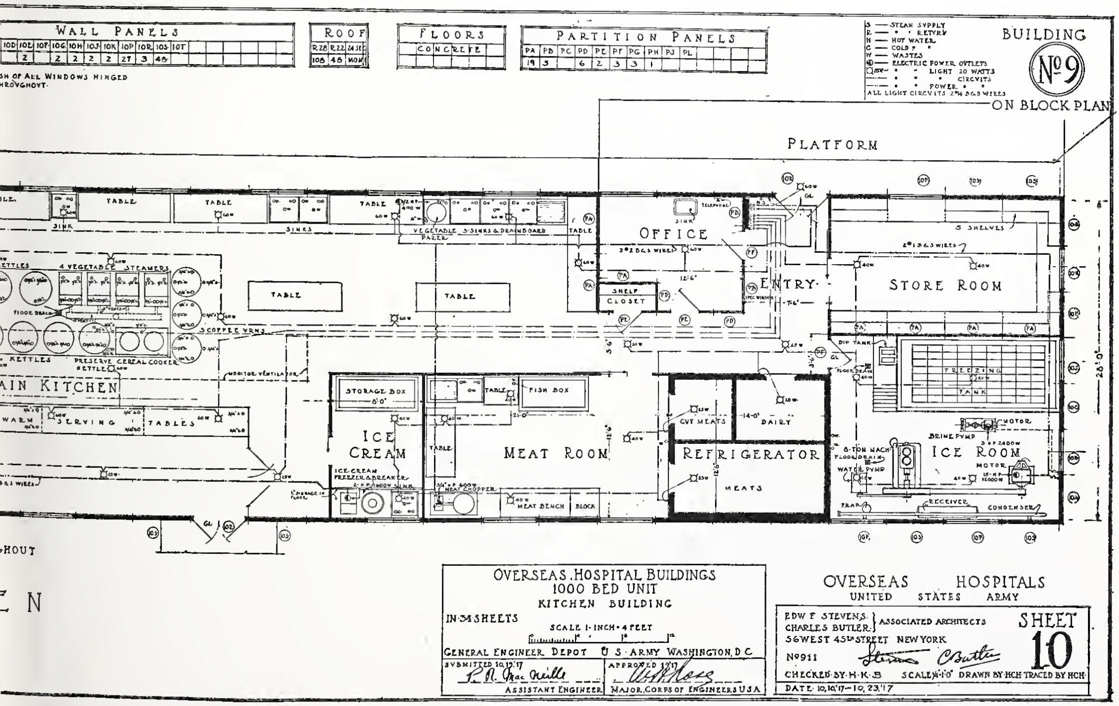

ELEVATOR
FLOUR BIN
DOUGH MIXER
PROOFING BOX
OVEN
BAKERY
TABLE
3 DOUGH TROUGHS
MONITOR VENTILATOR
MOULDER
CAKE MIXER
TABLE
SHELVES
BREAD RACKS
BREAD STORES
KETTLE
SECTION RANGE
BROILER
REFRIGERATOR
COOKS TABLE
SINK & DRAINBOARD
DIET KITCHEN
TABLE
WARMER
6 SECTION RANGE
HOOD
COOKS TABLE
PLATE SHELF
OFFICERS & NURSES COFFEE URNS
WARM TABLE
CORRIDOR
CONCRETE FL
KIT

FIG. 13.


WALL PANELS
ROOF
FLOORS
PARTITION PANELS
PARTITIONS MARKED TO ROOF TO HAVE UPPER SECTION OF CANVAS
SPECIAL W.C. PARTITIONS
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
ALL LIGHT CIRCUITS 2 #14 B&S WIRES
BUILDING No 1 ON BLOCK PLAN
CLERKS
MATRON
TOILET
COATS
ADJUTANT
COMMANDING OFFICER
WAITING ROOM
N BUILDING
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
ADMINISTRATION BUILDING
IN 34 SHEETS
SCALE 1 INCH = 4 FEET
GENERAL ENGINEER DEPOT, U.S. ARMY, WASHINGTON, D.C.
SUBMITTED 10.19.17
P.R. MacNeille
ASSISTANT ENGINEER
APPROVED 10.19.17
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
No 507
C. Butler
SHEET 2
CHECKED BY H.K.B.
SCALE 1/4"=1'0"
DRAWN BY HCH TRACED BY HCH
DATE 10.18.17 – 10.25.17


WALL PANELS
ROOF
FLOORS
CONCRETE
PARTITION PANELS
SASH OF ALL WINDOWS HINGED THROUGHOUT
S — STEAM SUPPLY
R — RETURN
H — HOT WATER
C — COLD
W — WASTES
ELECTRIC POWER OUTLETS
LIGHT 20 WATTS
CIRCUITS
POWER
ALL LIGHT CIRCUITS 2 #14 B&S WIRES
BUILDING No 9 ON BLOCK PLAN
PLATFORM
TABLE
SINKS
VEGETABLE PARER
3 SINKS & DRAINBOARD
KETTLES
4 VEGETABLE STEAMERS
3 COFFEE URNS
PRESERVE KETTLE
CEREAL COOKER
MONITOR VENTILATOR
MAIN KITCHEN
WARM SERVING TABLES
OFFICE
SHELF CLOSET
ENTRY
STORE ROOM
5 SHELVES
STORAGE BOX
ICE CREAM
ICE CREAM FREEZER & BREAKER
FISH BOX
MEAT ROOM
MEAT CHOPPER
MEAT BENCH
BLOCK
CUT MEATS
DAIRY
REFRIGERATOR
MEATS
FREEZING TANK
DIP TANK
BRINE PUMP
MOTOR
6 TON MACH.
WATER PUMP
ICE ROOM
RECEIVER
TRAP
CONDENSER
EN
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
KITCHEN BUILDING
IN 34 SHEETS
SCALE 1 INCH = 4 FEET
GENERAL ENGINEER DEPOT U.S. ARMY WASHINGTON, D.C.
SUBMITTED 10.19.17
P.R. MacNeille
ASSISTANT ENGINEER
APPROVED 1917
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45th STREET NEW YORK
No 911
C. Butler
SHEET 10
CHECKED BY H.K.B.
SCALE 1/4"=1'0"
DRAWN BY HCH TRACED BY HCH
DATE 10.10.17 – 10.23.17

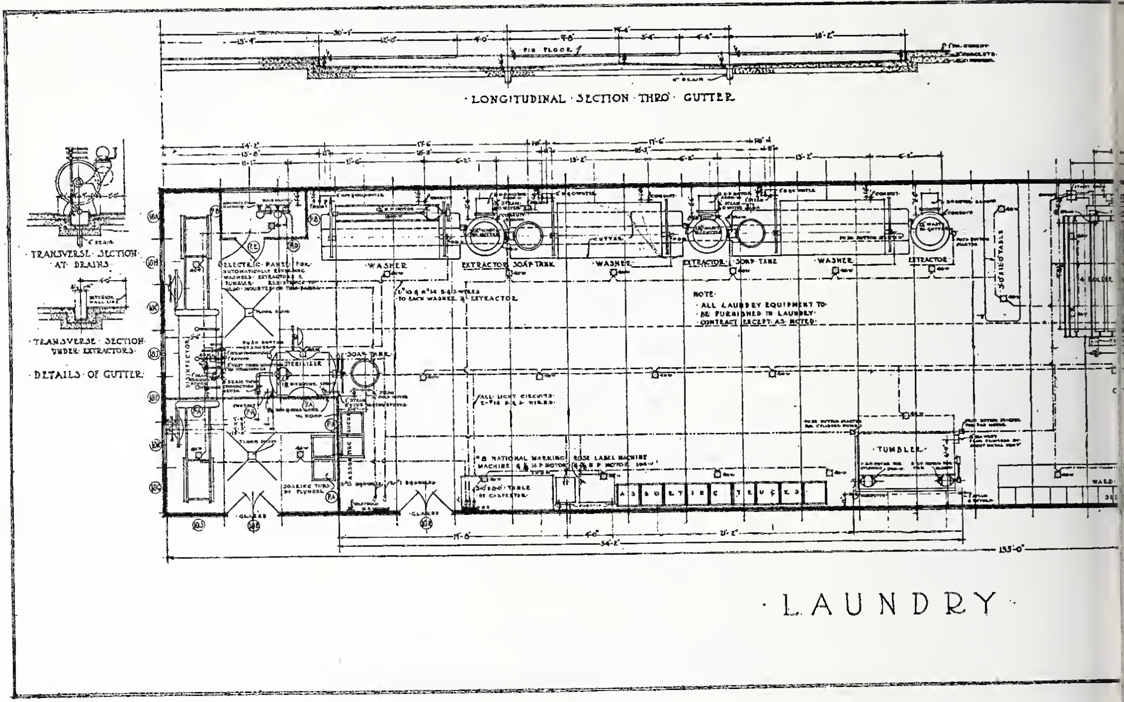

LONGITUDINAL SECTION THRO' GUTTER
TRANSVERSE SECTION AT DRAINS
TRANSVERSE SECTION UNDER EXTRACTORS
DETAILS OF GUTTER
WASHER
EXTRACTOR
SOAP TANK
WASHER
EXTRACTOR
SOAP TANK
WASHER
EXTRACTOR
NOTE: ALL LAUNDRY EQUIPMENT TO BE FURNISHED IN LAUNDRY CONTRACT EXCEPT AS NOTED
STERILIZER
SOAP TANK
DISINFECTOR
ALL LIGHT CIRCUITS 2-#14 B & S WIRES
TUMBLER
ASSORTING TRUCKS
SOAKING TUBS
GLAZED
135'-0"
LAUNDRY

FIG. 15.

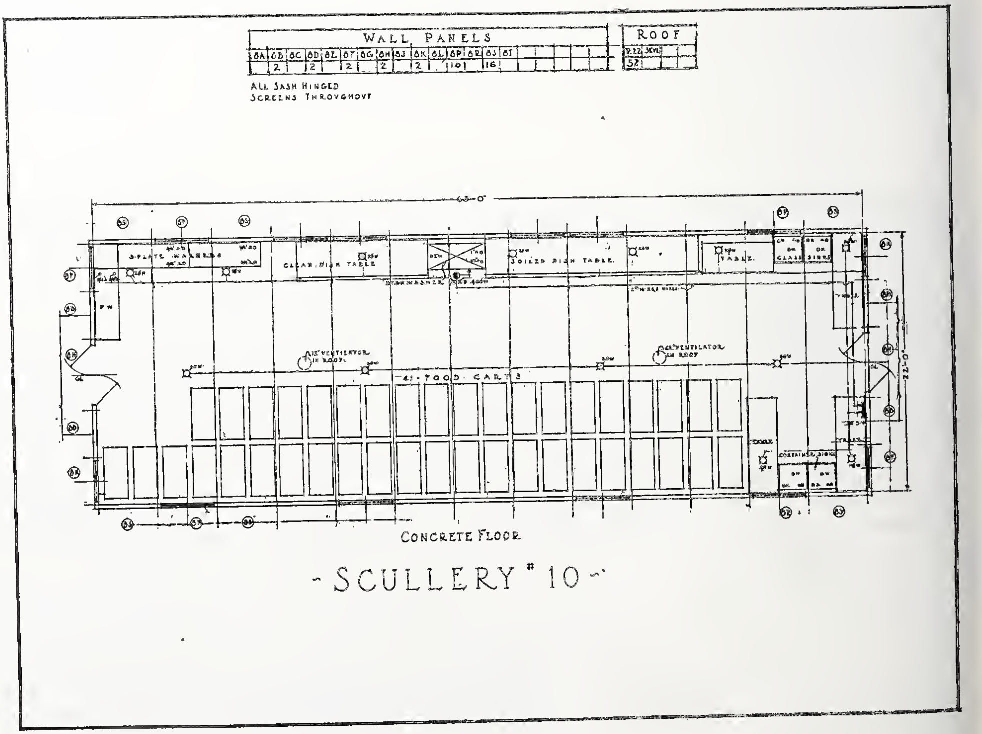
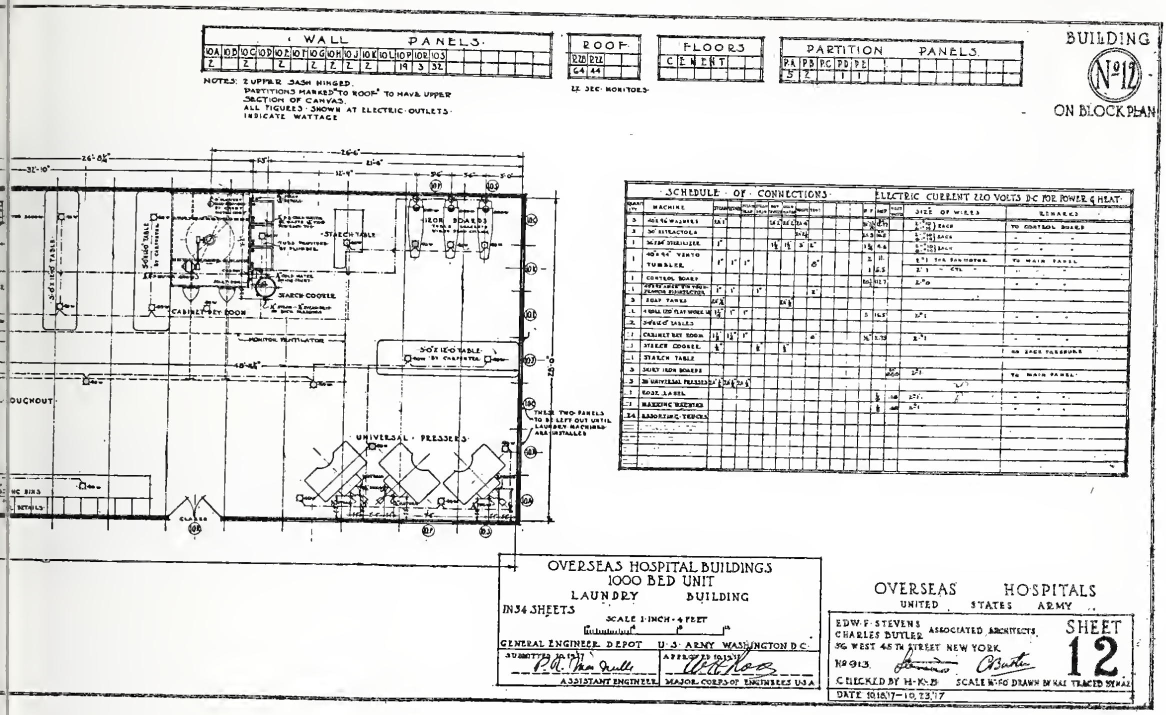

WALL PANELS
ROOF
ALL SASH HINGED
SCREENS THROUGHOUT
63'-0"
3-PLATE WARMERS
CLEAN DISH TABLE
DISHWASHER
SOILED DISH TABLE
TABLE
GLASS SINKS
12" VENTILATOR IN ROOF
12" VENTILATOR IN ROOF
43 FOOD CARTS
TABLE
CONTAINER SINKS
22'-0"
CONCRETE FLOOR
SCULLERY # 10

FIG. 14.


WALL PANELS
10A 10B 10C 10D 10E 10F 10G 10H 10J 10K 10L 10P 10R 10S
2 2 2 2 2 2 2 19 3 32
ROOF
R2B R2Z
64 44
2Z SEC. MONITORS
FLOORS
CEMENT
PARTITION PANELS
PA PB PC PD PE
5 2 1 1
NOTES: 2 UPPER SASH HINGED.
PARTITIONS MARKED "TO ROOF" TO HAVE UPPER SECTION OF CANVAS.
ALL FIGURES SHOWN AT ELECTRIC OUTLETS INDICATE WATTAGE
BUILDING No 12 ON BLOCK PLAN
26'-8½"
32'-10"
26'-6"
21'-6"
12'-9"
5'-6"
5'-6"
5'-0"
48'-4½"
25'-0"
5'-0"x12'-0" TABLE
5'-0"x10'-0" TABLE BY CARPENTER
CABINET DRY ROOM
STARCH TABLE
STARCH COOKER
IRON BOARDS
MONITOR VENTILATOR
5'-0"x12'-0" TABLE BY CARPENTER
THESE TWO PANELS TO BE LEFT OUT UNTIL LAUNDRY MACHINES ARE INSTALLED
UNIVERSAL PRESSERS
CLASSES
TOUCHOUT
SORTING BINS
DETAILS
SCHEDULE OF CONNECTIONS
ELECTRIC CURRENT 220 VOLTS D.C. FOR POWER & HEAT
QUANTITY
MACHINE
SIZE OF WIRES
REMARKS
40"x96" WASHERS
30" EXTRACTORS
36"x54" STERILIZER
40"x94" VENTO TUMBLER
CONTROL BOARD
SOAP TANKS
4 ROLL 120" FLAT WORK IRONER
5'x12'-0" TABLES
CABINET DRY ROOM
STARCH COOKER
STARCH TABLE
SHIRT IRON BOARDS
UNIVERSAL PRESSERS
ROSE LABEL
MARKING MACHINE
ASSORTING TRUCKS
TO CONTROL BOARD
TO MAIN PANEL
NO BACK PRESSURE
FOR FAN MOTOR
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
LAUNDRY BUILDING
IN 34 SHEETS
SCALE 1 INCH = 4 FEET
GENERAL ENGINEER DEPOT U. S. ARMY WASHINGTON D.C.
SUBMITTED 10.15.17
P. R. MacNulty
ASSISTANT ENGINEER
APPROVED 10.15.17
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
No 913.
C Butler
SHEET 12
CHECKED BY H-K-B
SCALE H-F-O DRAWN BY HAL TRACED BY HAZ
DATE 10.18.17-10.23.17

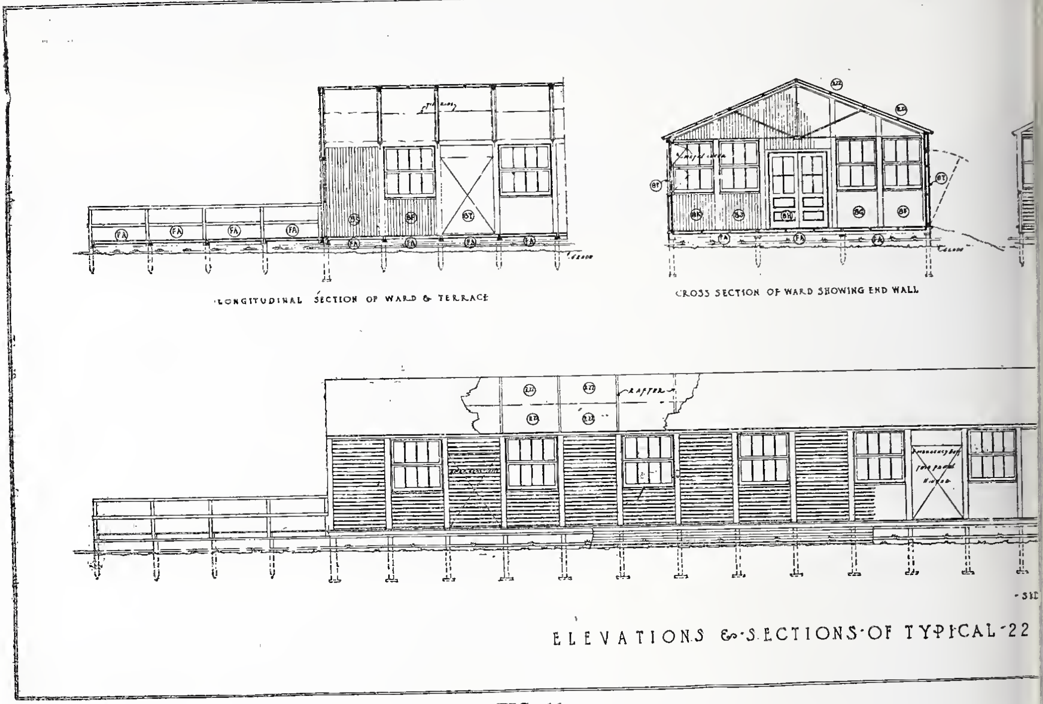

LONGITUDINAL SECTION OF WARD & TERRACE
CROSS SECTION OF WARD SHOWING END WALL
RAFTER
ELEVATIONS & SECTIONS OF TYPICAL 22

FIG. 16.

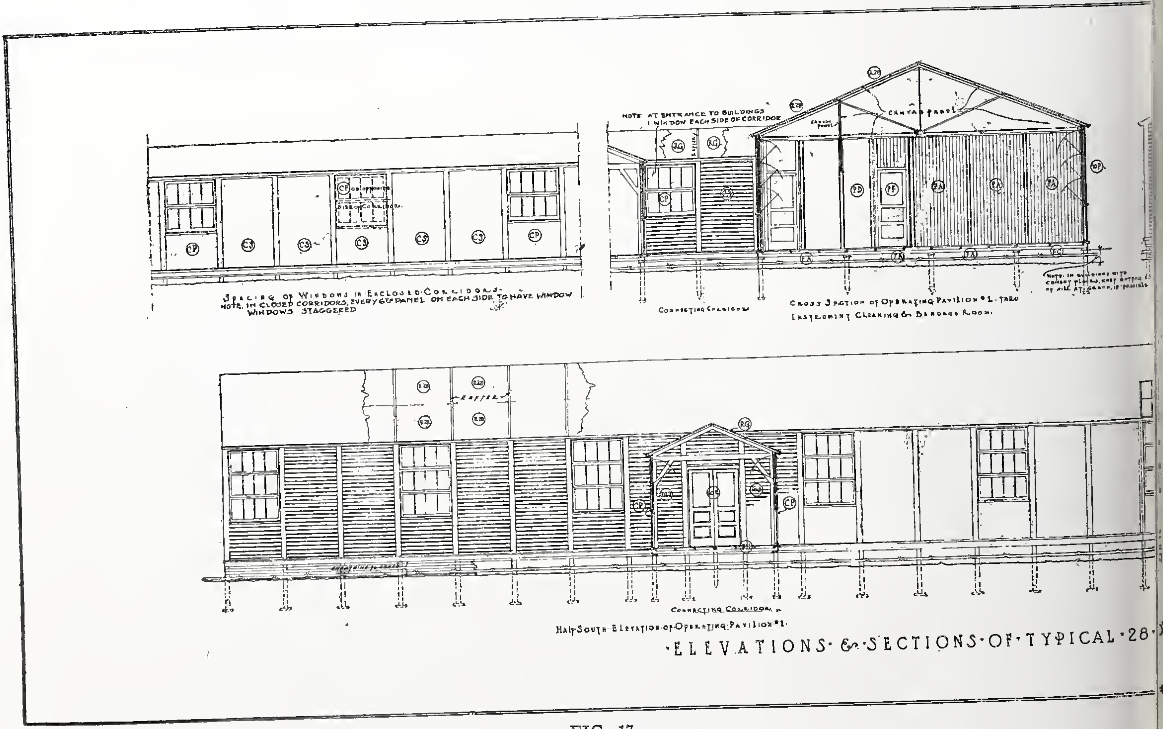
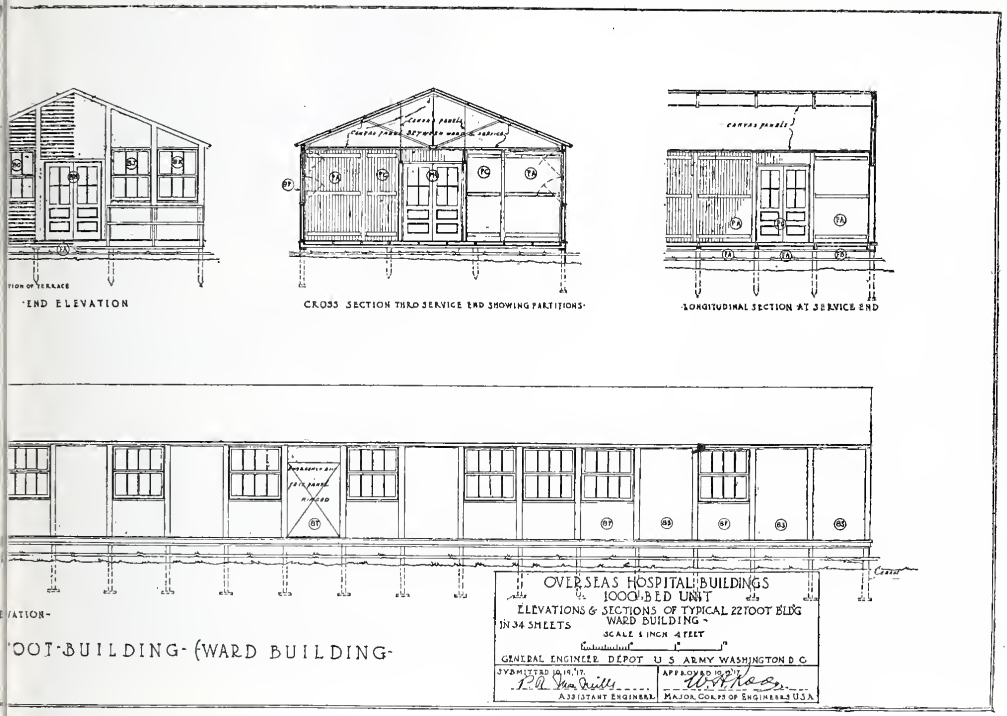
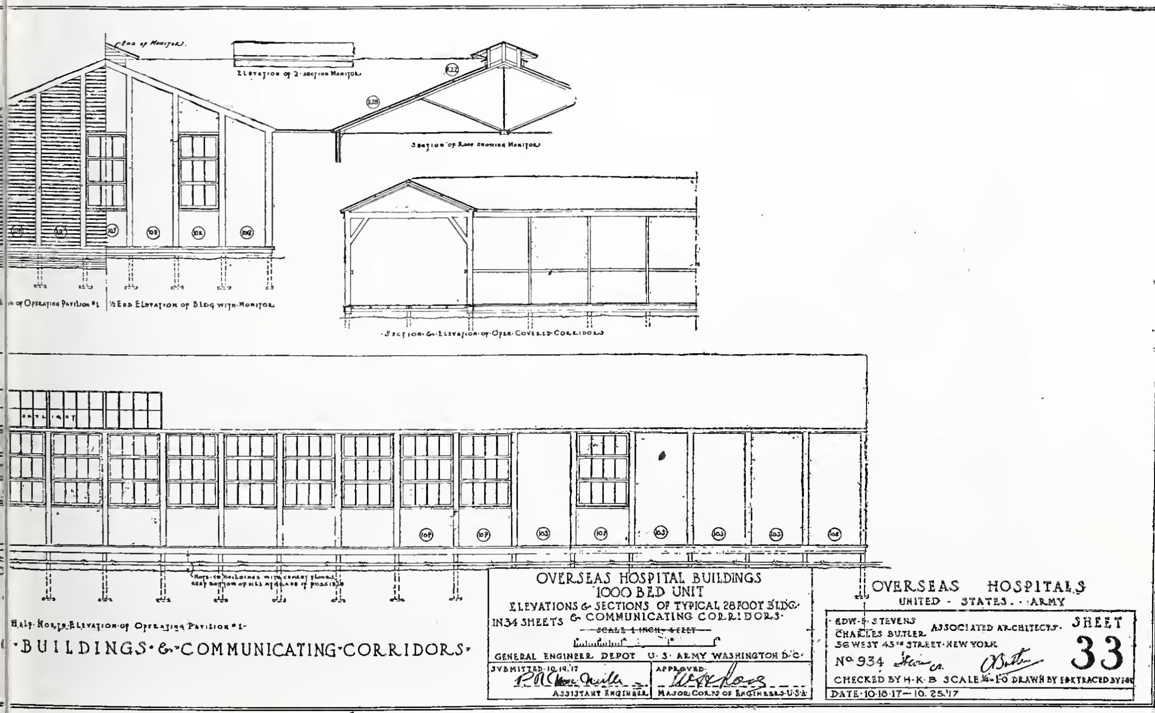

SPACING OF WINDOWS IN ENCLOSED CORRIDORS.
NOTE. IN CLOSED CORRIDORS, EVERY 6TH PANEL ON EACH SIDE TO HAVE WINDOW WINDOWS STAGGERED
NOTE AT ENTRANCE TO BUILDINGS 1 WINDOW EACH SIDE OF CORRIDOR
CANVAS PANEL
CONNECTING CORRIDOR
CROSS SECTION OF OPERATING PAVILION # 1. THRO INSTRUMENT CLEANING & BANDAGE ROOM.
RAFTER
CONNECTING CORRIDOR
HALF SOUTH ELEVATION OF OPERATING PAVILION # 1.
ELEVATIONS & SECTIONS OF TYPICAL 28

FIG. 17.


canvas panels
canvas panels between ward & service
canvas panels
END ELEVATION
CROSS SECTION THRO SERVICE END SHOWING PARTITIONS
LONGITUDINAL SECTION AT SERVICE END
VATION
OOT BUILDING (WARD BUILDING
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
ELEVATIONS & SECTIONS OF TYPICAL 22 FOOT BLDG
WARD BUILDING
IN 34 SHEETS
SCALE 1 INCH 4 FEET
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D C
SUBMITTED 10.19.'17.
P. A. MacNeill
ASSISTANT ENGINEER
APPROVED 10.19.'17
W. H. Rose
MAJOR CORPS OF ENGINEERS U.S.A.


End of Monitor
Elevation of 2-section Monitor
Section of Roof showing Monitor
of Operating Pavilion #1
½ End Elevation of Bldg with Monitor
Section & Elevation of Open Covered Corridors
Half North Elevation of Operating Pavilion #1
BUILDINGS & COMMUNICATING CORRIDORS
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
ELEVATIONS & SECTIONS OF TYPICAL 28 FOOT BLDG
& COMMUNICATING CORRIDORS
IN 34 SHEETS
~~SCALE 1 INCH 4 FEET~~
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D C
SUBMITTED 10.19.'17
P. A. MacNeill
ASSISTANT ENGINEER
APPROVED
W. H. Rose
MAJOR CORPS OF ENGINEERS U.S.A.
OVERSEAS HOSPITALS
UNITED STATES ARMY
EDW. F. STEVENS
CHARLES BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
SHEET
33
No 934
C. Butler
CHECKED BY H. K. B
SCALE ¼"-1'0
DATE 10.18.17 — 10.25.'17

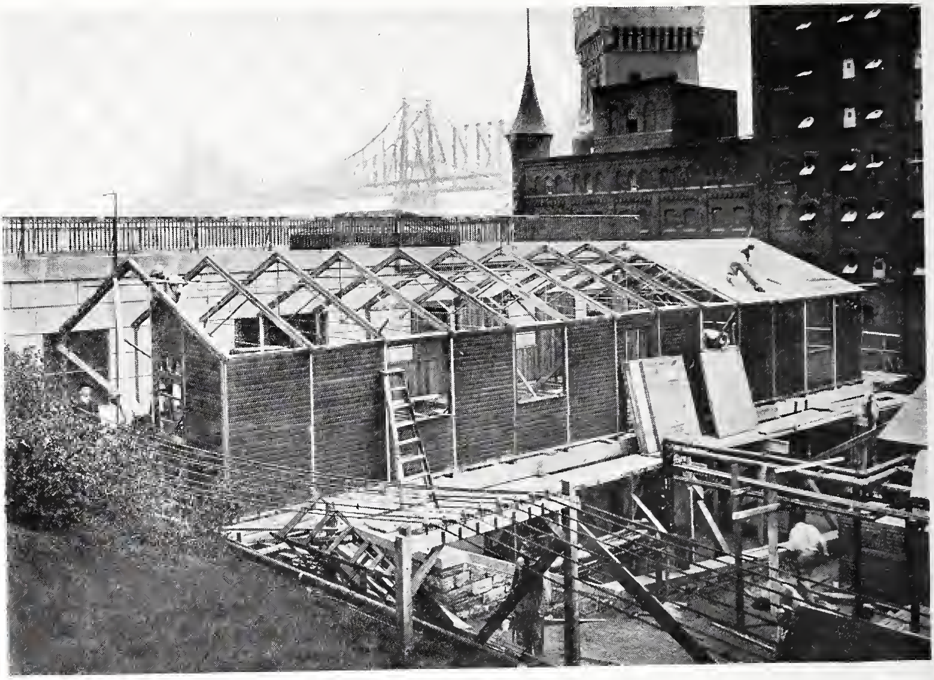


FIG. 18. ROCKEFELLER INSTITUTE BASE HOSPITAL WARD.
Butler & Rodman, Architects.

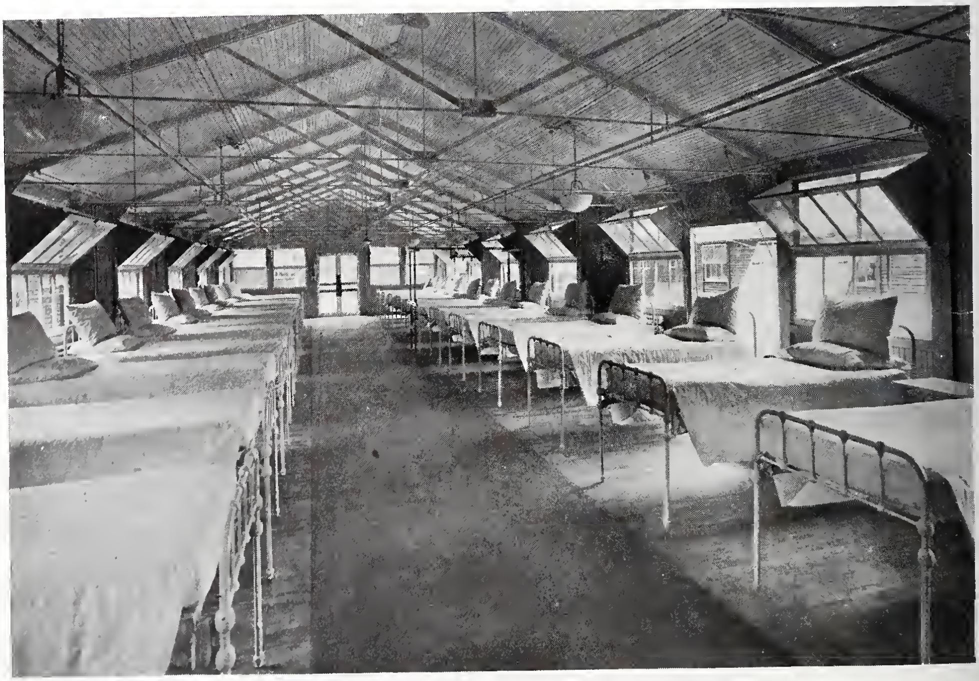


FIG. 18a. EXTERIOR VIEW. ROCKEFELLER INSTITUTE BASE HOSPITAL WARD.
Butler & Rodman, Architects.

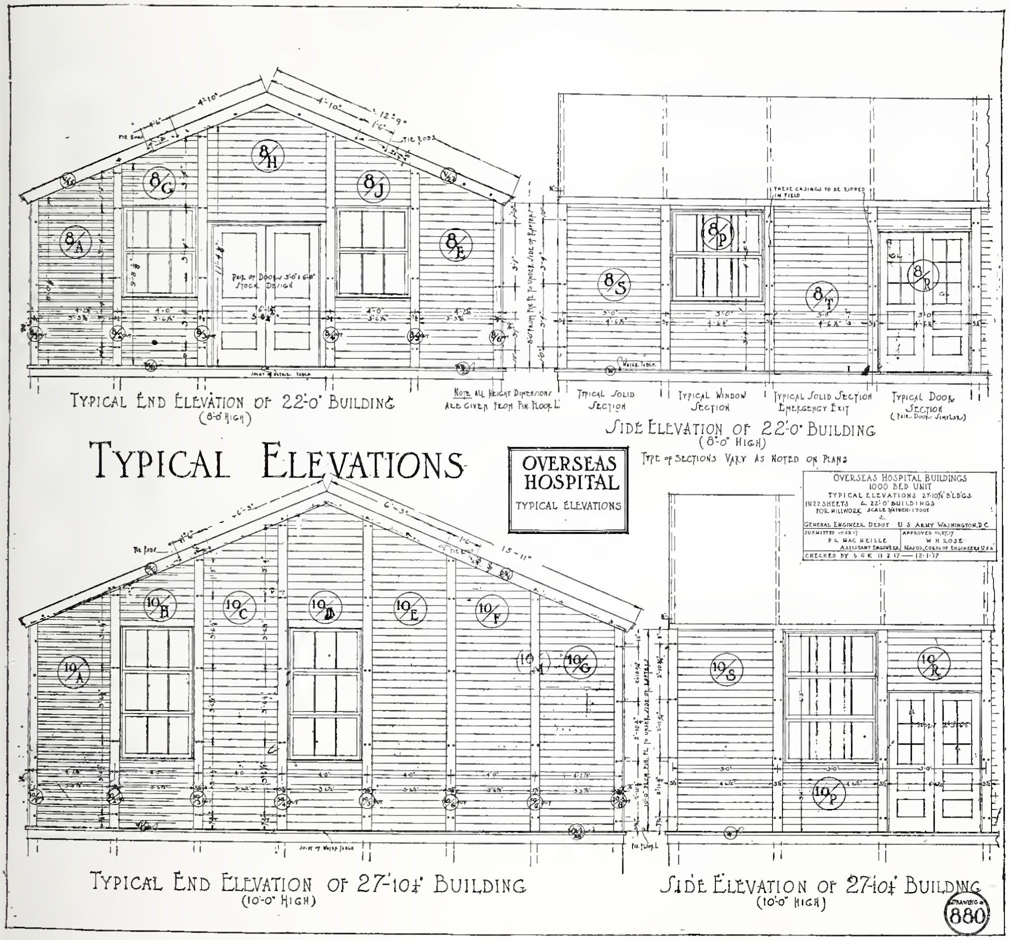

TYPICAL ELEVATIONS
OVERSEAS HOSPITAL
TYPICAL ELEVATIONS
TYPICAL END ELEVATION OF 22'-0" BUILDING
(8'-0" HIGH)
PAIR OF DOORS 5'-0" x 6'-8" STOCK DESIGN
TIE RODS
NOTE ALL HEIGHT DIMENSIONS ARE GIVEN FROM FIN. FLOOR L.
SIDE ELEVATION OF 22'-0" BUILDING
(8'-0" HIGH)
TYPICAL SOLID SECTION
TYPICAL WINDOW SECTION
TYPICAL SOLID SECTION EMERGENCY EXIT
TYPICAL DOOR SECTION
(PAIR DOORS SIMILAR)
THESE CASINGS TO BE RIPPED IN FIELD
TYPE OF SECTIONS VARY AS NOTED ON PLANS
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
TYPICAL ELEVATIONS 27'-10¾" B'LD'GS.
IN 22 SHEETS & 22'-0" BUILDINGS
FOR MILLWORK SCALE ¼ INCH = 1 FOOT
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON, D.C.
SUBMITTED 10.23.17
P. R. MAC NEILLE
ASSISTANT ENGINEER
APPROVED 10.27.17
W. H. ROSE
MAJOR, CORPS OF ENGINEERS U.S.A.
CHECKED BY G G K 11 2 17 — 12.1.17
8/A 8/C 8/H 8/J 8/E 8/S 8/P 8/T 8/R
10/A 10/B 10/C 10/D 10/E 10/F 10/G 10/S 10/R 10/P
TYPICAL END ELEVATION OF 27'-10¾" BUILDING
(10'-0" HIGH)
SIDE ELEVATION OF 27'-10¾" BUILDING
(10'-0" HIGH)
DRAWING No. 880

FIG. 19.

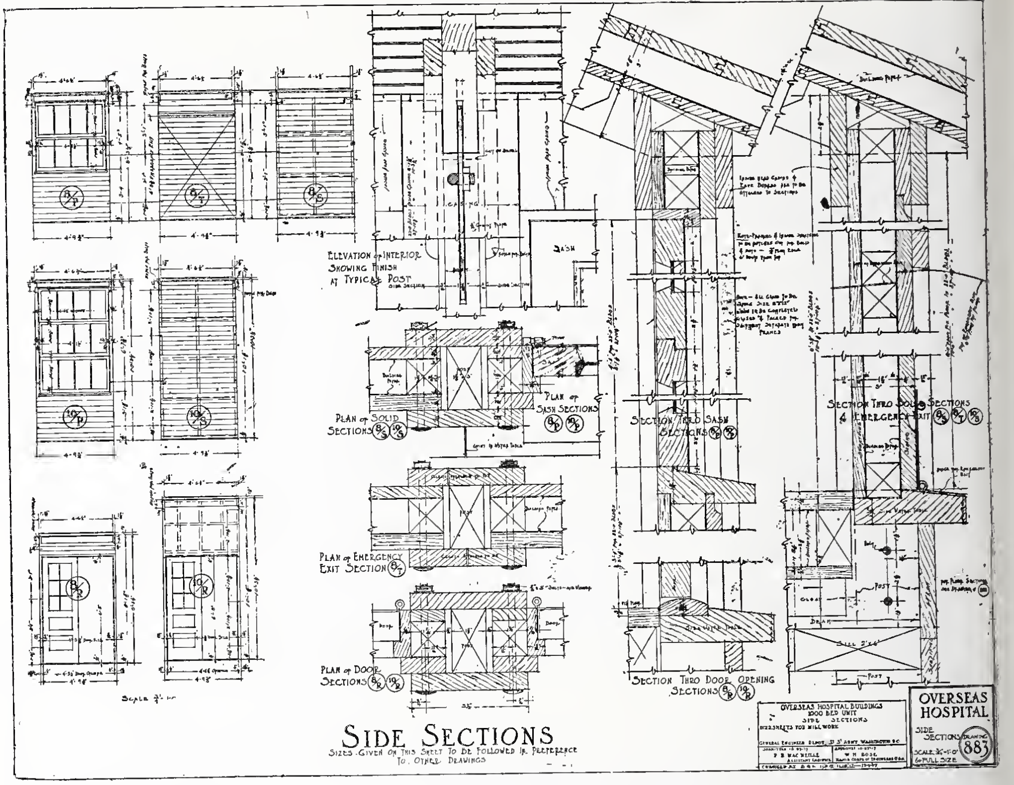

ELEVATION of INTERIOR
SHOWING FINISH
AT TYPICAL POST
SASH
PLAN of SOLID SECTIONS 8/S 10/S
PLAN of SASH SECTIONS 8/P 10/P
PLAN of EMERGENCY EXIT SECTION 8/T
PLAN of DOOR SECTIONS 8/R 10/R
SECTION THRO SASH SECTIONS 8/P 10/P
SECTION THRO SOLID SECTIONS & EMERGENCY EXIT 8/S 8/T 10/S
SECTION THRO DOOR OPENING SECTIONS 8/R 10/R
SILL 2"x6"
POST
BEAM
CLEAT
BUILDING PAPER
SCALE 3/4"=1'-0"
SIDE SECTIONS
SIZES GIVEN ON THIS SHEET TO BE FOLLOWED IN PREFERENCE TO OTHER DRAWINGS
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
SIDE SECTIONS
SIZE SHEETS FOR MILL WORK
GENERAL ENGINEER DEPOT U S ARMY WASHINGTON D C
F B MAC NEILLE
ASSISTANT ENGINEER
W H ROSE
MAJOR CORPS OF ENGINEERS U S A
OVERSEAS HOSPITAL
SIDE SECTIONS
DRAWING 883
SCALE 3/4"=1'-0"
& FULL SIZE

FIG. 20.

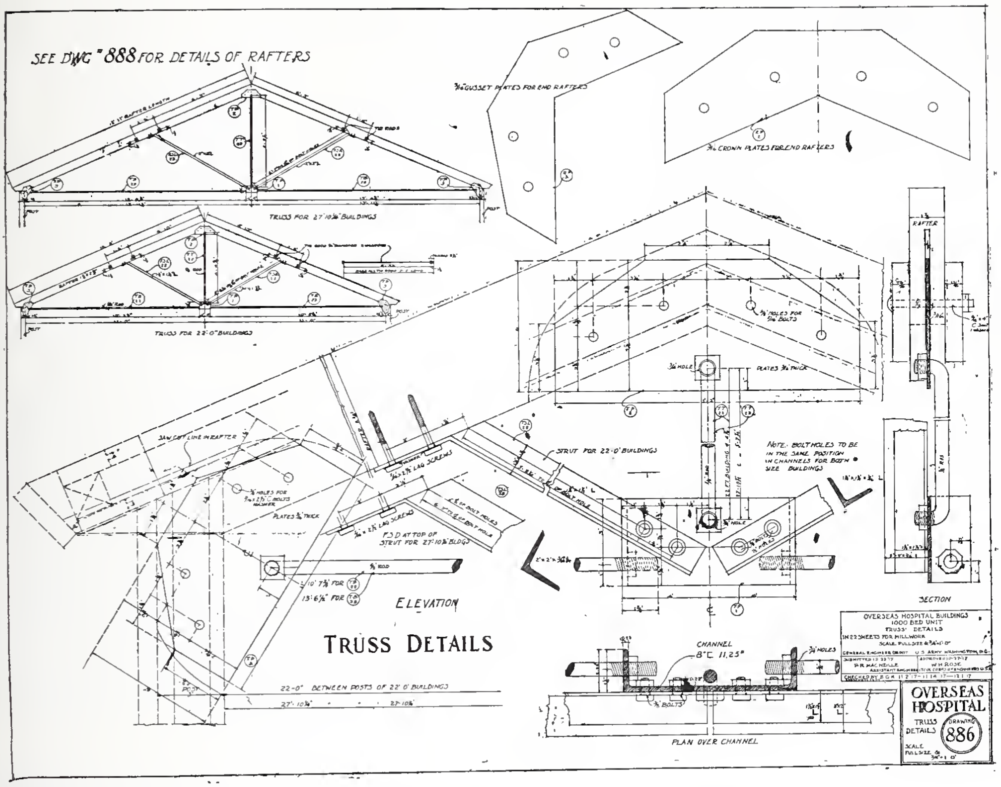

SEE DWG # 888 FOR DETAILS OF RAFTERS
TRUSS FOR 27'-10¾" BUILDINGS
TRUSS FOR 22'-0" BUILDINGS
POST
3/16" GUSSET PLATES FOR END RAFTERS
3/16" CROWN PLATES FOR END RAFTERS
RAFTER
3/8" HOLES FOR 5/16" BOLTS
3/4" HOLE
PLATES 3/16" THICK
SAW CUT LINE IN RAFTER
3/8" HOLES FOR 5/16" x 2½" C BOLTS WASHER
PLATES 3/16" THICK
3/16" x 2¾" LAG SCREWS
F.S.D. AT TOP OF STRUT FOR 27'-10¾" BLDGS
STRUT FOR 22'-0" BUILDINGS
NOTE: BOLT HOLES TO BE IN THE SAME POSITION IN CHANNELS FOR BOTH SIZE BUILDINGS
5/8" ROD
10'-7¾" FOR
13'-6½" FOR
ELEVATION
TRUSS DETAILS
22-0" BETWEEN POSTS OF 22'-0" BUILDINGS
27'-10¾"
27'-10¾"
SECTION
CHANNEL
8" ⊏ 11.25#
3/4" HOLES
3/8" BOLTS
PLAN OVER CHANNEL
OVERSEAS HOSPITAL BUILDINGS
1000 BED UNIT
TRUSS' DETAILS
IN 22 SHEETS FOR MILLWORK
SCALE FULL SIZE & 3/4"=1'-0"
GENERAL ENGINEER DEPOT U.S. ARMY WASHINGTON, D.C.
SUBMITTED 12-22-17
F.R. MAC NEILLE
ASSISTANT ENGINEER
APPROVED 12-27-17
W.H. ROSE
CORPS OF ENGINEERS U.S.A.
CHECKED BY B.G.R.
OVERSEAS HOSPITAL
TRUSS DETAILS
DRAWING 886
SCALE FULL SIZE & 3/4"=1'-0"

FIG. 21.

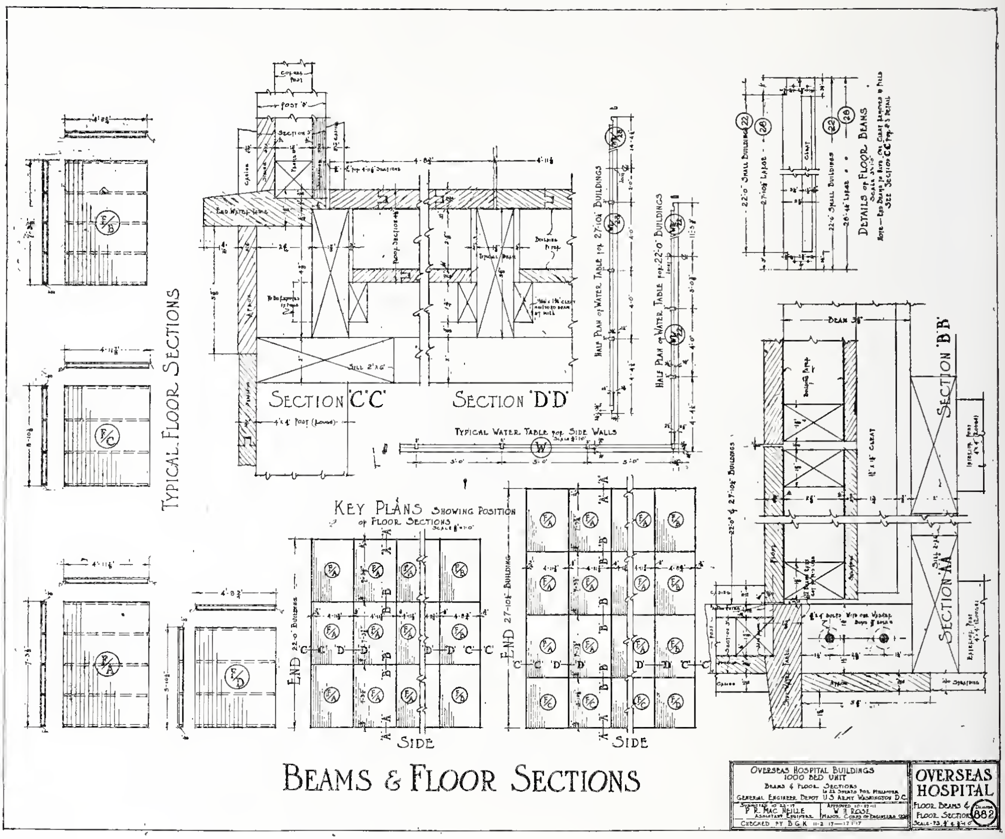

Typical Floor Sections
Section 'C'C'
Section 'D'D'
Half Plan of Water Table for 27'-10½" Buildings
Half Plan of Water Table for 22'-0" Buildings
Typical Water Table for Side Walls
Details of Floor Beams
Section 'B'B'
Section 'A'A'
Key Plans Showing Position of Floor Sections
End 22'-0" Buildings
End 27'-10½" Building
Side
Side
Sill 2"x6"
Beam 3⅝"
Cleat
Beams & Floor Sections
Overseas Hospital Buildings
1000 Bed Unit
Beams & Floor Sections
General Engineer Depot U.S. Army Washington D.C.
Submitted 10-23-17
P. R. Mac Neille
Assistant Engineer
Approved
W. H. Rose
Major Corps of Engineers
Checked by B G K
Overseas Hospital
Floor Beams & Floor Sections
Drawing 882

FIG. 22.

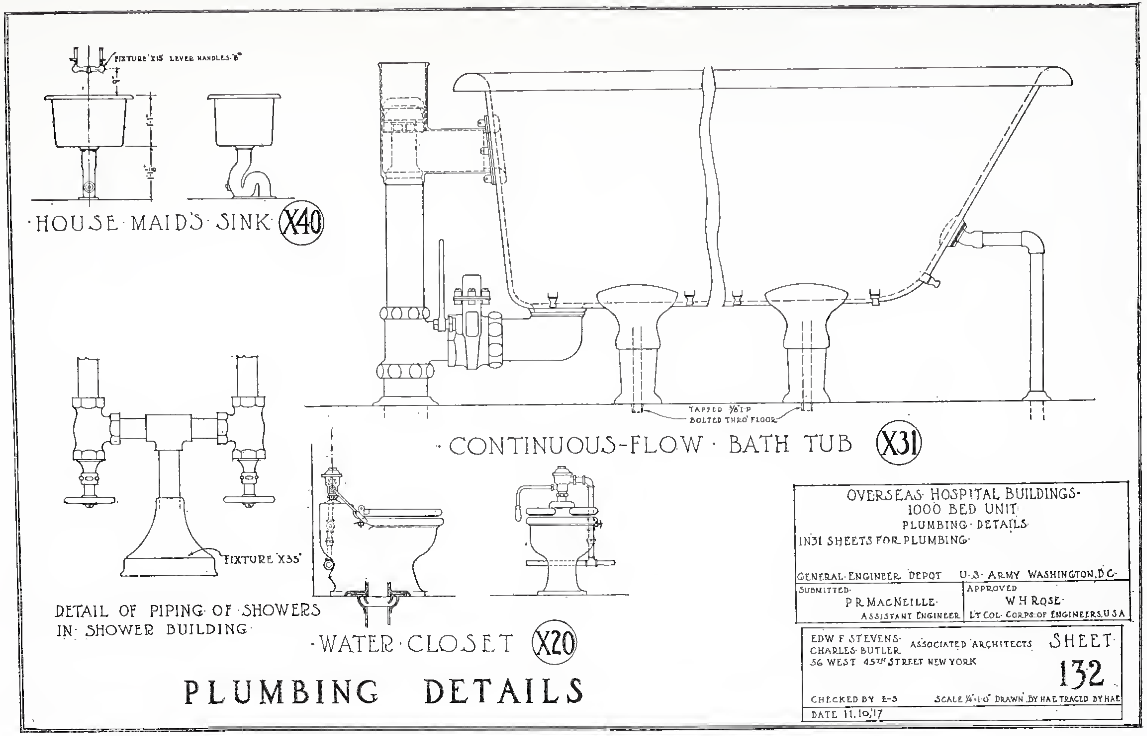

FIXTURE 'X15' LEVER HANDLES-'B'
9"
1'-1"
1'-10"
·HOUSE·MAID'S·SINK· X40
TAPPED ⅝ I P
BOLTED THRO' FLOOR
·CONTINUOUS-FLOW·BATH TUB X31
FIXTURE 'X35'
DETAIL OF PIPING OF SHOWERS
IN SHOWER BUILDING
·WATER·CLOSET X20
PLUMBING DETAILS
OVERSEAS HOSPITAL BUILDINGS·
1000 BED UNIT
PLUMBING·DETAILS
IN 31 SHEETS FOR PLUMBING·
GENERAL·ENGINEER DEPOT U·S·ARMY WASHINGTON, D.C.
SUBMITTED·
P R MACNEILLE·
ASSISTANT ENGINEER
APPROVED
W H ROSE·
LT COL·CORPS OF ENGINEERS U.S.A
EDW F STEVENS·
CHARLES·BUTLER
ASSOCIATED ARCHITECTS
56 WEST 45TH STREET NEW YORK
SHEET·
132
CHECKED BY E-S
SCALE ¼"=1'-0"
DRAWN BY HAE
TRACED BY HAE
DATE 11.10.'17

FIG. 23.

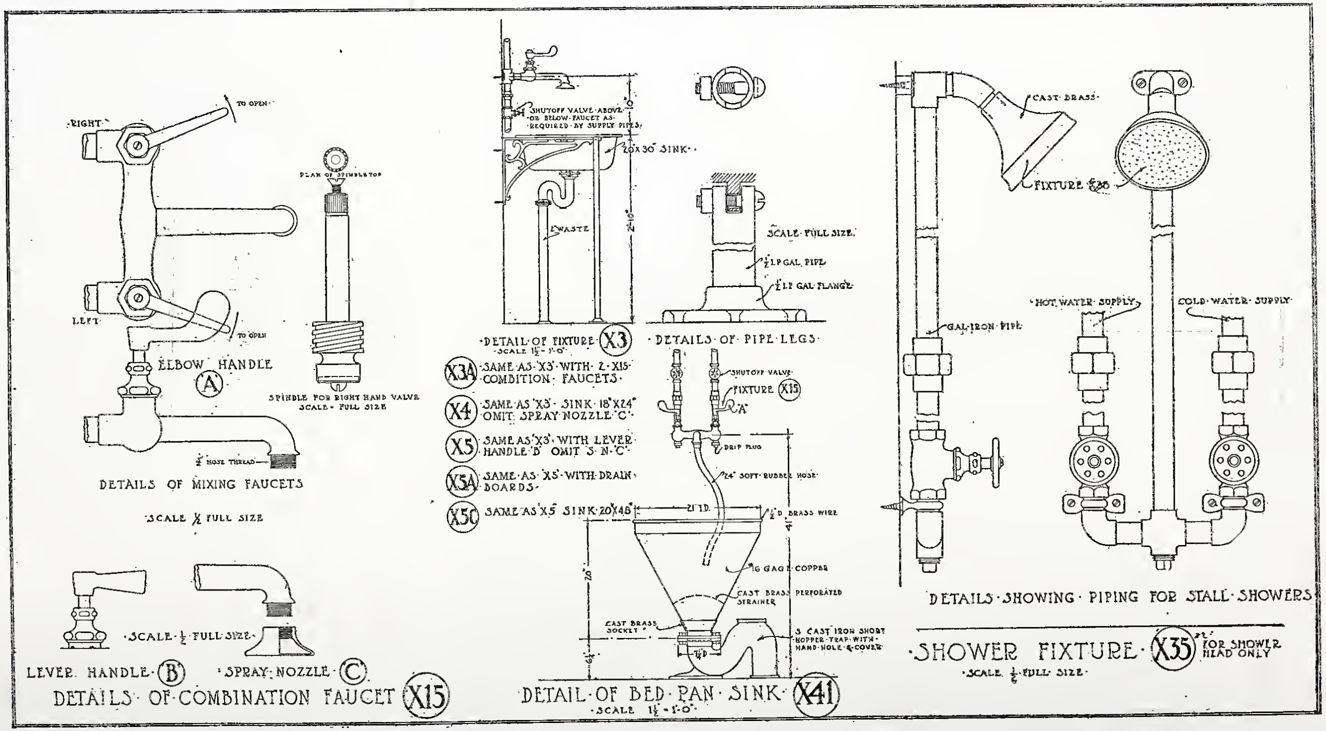
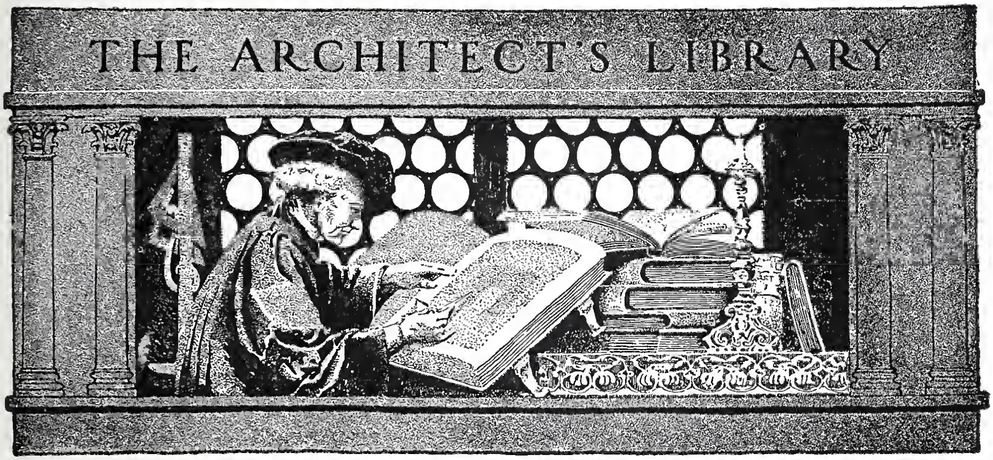

RIGHT
TO OPEN
LEFT
TO OPEN
ELBOW HANDLE (A)
PLAN OF SPINDLETOP
SPINDLE FOR RIGHT HAND VALVE SCALE = FULL SIZE
½" HOSE THREAD
DETAILS OF MIXING FAUCETS
SCALE ½ FULL SIZE
SCALE ½ FULL SIZE
LEVER HANDLE (B)
SPRAY NOZZLE (C)
DETAILS OF COMBINATION FAUCET (X15)
SHUTOFF VALVE ABOVE OR BELOW FAUCET AS REQUIRED BY SUPPLY PIPES
20"X30" SINK
1½" WASTE
2'-10"
DETAIL OF FIXTURE (X3) SCALE 1½"=1'-0"
(X3A) SAME AS X3 WITH 2 X15 COMBITION FAUCETS
(X4) SAME AS X3 SINK 18"X24" OMIT SPRAY NOZZLE C
(X5) SAME AS X3 WITH LEVER HANDLE B OMIT S. N. C
(X5A) SAME AS X5 WITH DRAIN BOARDS
(X5C) SAME AS X5 SINK 20"X48"
SCALE FULL SIZE
½" I.P. GAL PIPE
½" I.P. GAL FLANGE
DETAILS OF PIPE LEGS
SHUTOFF VALVE
FIXTURE (X15)
A
DRIP PLUG
24" SOFT RUBBER HOSE
21" I.D.
½" D. BRASS WIRE
4"
20"
16 GAGE COPPER
CAST BRASS PERFORATED STRAINER
CAST BRASS SOCKET
3" CAST IRON SHORT HOPPER TRAP WITH HAND HOLE & COVER
4" D
6"
DETAIL OF BED PAN SINK (X41) SCALE 1½"=1'-0"
CAST BRASS
FIXTURE
GAL IRON PIPE
HOT WATER SUPPLY
COLD WATER SUPPLY
DETAILS SHOWING PIPING FOR STALL SHOWERS
SHOWER FIXTURE (X35) FOR SHOWER HEAD ONLY
SCALE ⅙ FULL SIZE

FIG. 24.



BOOKS FROM UNIVERSITY PRESSES

By RICHARD F. BACH

Curator, School of Architecture, Columbia University

THERE should be no difficulty in discerning the even tenor of good quality maintained by at least three of our University presses in their recent works on architecture and the allied arts. It is, in fact, an unalloyed benefit that, in a country in which the federal or state governments do not themselves see fit to subsidize publications of great scientific, artistic or even popular value—but which, because of their necessarily limited appeal, are doomed to find but a limited sale—several great institutions have undertaken to issue such works through their University presses. In this respect, at least, the institutions have assumed certain responsibilities which in countries across the Atlantic are often taken under the mantle of a ministry of public instruction or of fine arts or under that of some branch of the government charged with the care of museums, collections, libraries, and the like. One might aver that under a system of government liberally democratic the great university or museum or other individual institution of educational or research purposes is distinctly a fit source for learned works, and especially for such of these as would win but little favor or comment, not to mention sale, because of their frequently somewhat abstruse or exotic subject matter. What is more, there are not a few valuable productions that now receive full recognition, but that under other conditions could never see the light because their publication would have to be assumed by the author as a personal responsibility or else financed by a private benefaction. It is to the undying credit of that becoming modesty so rarely the accompaniment of great wealth, that there have been persons willing to bequeath or donate to universities large sums of money for such purposes, sometimes with restrictions as to the character of the works to be financed out of their gifts, but always with the good of the community sufficiently at heart to make it seem to the donors quite feasible to subordinate their own names to those of the university in question.

The most momentous undertaking on the part of any of our university presses in the field of fine arts is beyond question the remarkable work by Arthur Kingsley Porter on *Lombard Architecture,* the result of as painstaking and continuous research as has ever graced the fruit of an archeologist's labors and a most salutary indication of the progress of American scholarship in the history of art. This product of the Yale University Press, amply vindicating the level of good quality so well illustrated by Goodyear's *Greek Refinements* (see The Architectural Record for March, 1915), is a study in four volumes of Romanesque art in northern Italy from the sixth to the thirteenth century, and has already been considered adequately and at length in the excellent review by Professor Hamlin published in this place in the May and September, 1917, issues of this journal.

* * * * *

The medieval field is again considered in Clarence Ward's *Mediaeval Church Vaulting* (Small Quarto; pp. xi + 192, ill. Princeton, N. J.; Princeton University Press; 1915. $4.), which is number five of the Princeton Monographs in Art and Archeology. Acting on the assumption that the student of medieval architecture, especially of the Gothic era, finds perhaps its strongest appeal in the peculiar structural character which it possesses, Mr. Ward has prepared a treatise of enviable detail and accuracy. There are four long and thoroughly well illustrated chapters, dealing respectively with nave and aisle vaults, with transept and crossing vaults, with apse vaults, and with ambulatory vaults. There is an excellent index and bibliography that will be a blessing to students, for what is such a study without a good bibliography? There are no less than eighty-nine photographic illustrations, chiefly taken by the author, and four plates of carefully drawn plans. Mr. Ward's book will take its place as a thoroughly useful work in its field, by the side of other recent studies of germane character, namely, Bond's studies in English church vaulting, Moore's in French church vaulting and Porter's in Italian church vaulting.

To the list of works on Roman mosaics, chief among which are those by Gerspach, Frotheringham and Barbier de Montault, the Princeton University Press has added a monograph by Charles R. Morey entitled *Lost Mosaics and Frescoes of Rome of the Mediaeval Period.* A Publication of Drawings contained in the collection of Cassiano dal Pozzo, now in the Royal Library, Windsor Castle. (Small Quarto; pp. 70, with 7 pl. and numerous text ills. Princeton, N. J.; Princeton University Press; 1915. $2.) Mr. Morey's book is a study of a selected number of plates included in the great collection of drawings and prints which has been one of the most precious possessions of the library of Cardinal Albani, then under the custodianship of the renowned Winckelmann, and which had been purchased by George the Third through the agency of James Adam. The drawings selected for publication in the present monograph, number four of the Princeton Monographs in Art and Archeology, are copies of mosaics and frescoes which once decorated the churches of Rome but which are now destroyed either wholly or in part, or are so much changed by restoration or repainting as to bear little resemblance to their original appearance. A most interesting chapter is that dealing with Pietro Cavallini, the thirteenth century painter mosaicist, one of those pale personalities in the world of Vasari-inspired fictional biographies of artists, that is by infinitesimal steps assuming some definition.

* * * * *

As painter, sculptor, scientist, mechanician, musician, engineer or finally as architect, Leonardi da Vinci offers a subject of alluring fascination to the biographer. Realizing that Leonardo's painting and sculpture and architecture formed only a few of the many and varied fascets from which his versatility reflected so consistent a radiance, a fragment only of the great soul's almost universal range of activity and thought—Professor Osvald Sirén of the University of Stockholm has prepared a fairly detailed life of the artist, entitled *Leonardo da Vinci, the Artist and the Man* (Imperial octavo; pp. xviii+235, over 200 illus. New Haven, Conn.; Yale University Press; 1916. $6.), containing most of the facts known about him and depicting with remarkable clearness and in the inestimably valuable light of expert criticism the *milieu* out of which grew the masterpieces with which we are familiar and whose inscrutability in some cases has been the prompter for endless conjecture and an acceptably justifiable cause for much confusion in the inkpots of critics of both high and low degree. As an art critic Professor Sirén's authority is undisputed and his masterly handling of esthetic analysis in the present work is good evidence of his ability. As viewed from the standpoint of its very readable text, this volume is again a notable performance, readily taking its place with A. J. Anderson's remarkable book, *The Admirable Painter;* while the superior quality of the illustrations leaves nothing to be wished for.

It is beyond the necessarily limited scope of the present one volume work to mention all that Leonardo prepared and planned as a creative artist. The author has confined himself mainly to paintings and sculptures and other efforts which were finally carried to execution wholly or at least in part, and to such drawings as were made in preparation for important works. Professor Sirén has directed particular attention and interest to Leonardo's chief qualities and has with good judgment relegated to a subordinate place all subjective hypotheses and questions of moot authenticity involving discussion of pros and cons on minor points. Priority has likewise been given to the study of the artist's mode of expression and to the course of his steady development in the light of his authentic works. To bring out this purpose effectively, so far as his paintings and sculpture are concerned, comparisons between Leonardo's works and earlier and later representations of similar subjects by other artists have been included, since the master's position in the history of art, and the epoch-making character of his contributions both in line and in form, can be realized most forcibly in the light of such a comparative method of treatment.

Most interesting for us at the moment, of course, is the chapter dealing with Leonardo's architectural occupations, which have not by any means approximated his accomplishments in the fields of painting or sculpture, but which have been studied to such extent and with such good results that the artist has definitely taken his place as an architect of high ideals and sound execution; witness his studies for the dome of Milan Cathedral, and numerous specific problems, undertaken chiefly from a purely theoretican viewpoint, represented in extant original drawings, not to mention suggestions for an ideal city which, though formidable as a project, nevertheless contains hints at civic improvement then undreamed of and even now not conceived in such a grand manner. No great amount of attention needed to be granted in Sirén's book to da Vinci's architectural work, since any detailed study of this could be but a pendant to von Geymüller's systematic account or to Solmi's monograph giving detailed information as to actually executed buildings by Leonardo. We sincerely feel that Professor Sirén has done a great work in the present biography of this many-sided artist, a character of consummate versatility such as has not been so generally characteristic of our great men since the Renaissance.

* * * * *

An excellent study in a field not by any means adequately understood in this country is that by Mr. T. P. Bennett entitled *The Relation of Sculpture to Architecture.* (Large Octavo; pp. xii + 204, with 210 ills. Cambridge, England: Cambridge University Press; 1916. New York; G. P. Putnam's Sons. $4.50.) An introductory chapter of the volume presents a discussion of the intimate relation of sculpture to architecture, noting the subservience of sculpture to surrounding architectural forms, the character of monuments of different types, the attraction and importance of architectural sculpture, the use of lettering, and gives some brief note of the character of modern design in this art in France, Germany and America. Then follows a chapter on the treatment and placing of sculpture in the historic periods, carrying the study from the Nile of 4000 B. C. to the English Renaissance. This is followed by two chapters on decorative sculpture in the sense of motives distinctly applied to architectural forms and those more closely related in the guise of carved ornamental forms. Four ensuing chapters are more theoretic in their nature, discussing the placing and environment of monuments, the limitations and ideal character of both small and large monuments, the nature of egregious monumental layouts involving large areas of adjoining territory as in the case of the proposed Robert Fulton Memorial in New York; while a concluding section is taken advantage of to urge a better understanding of sculpture by architects and of architecture by sculptors, the conditions to control the commissioning of a sculptor for architectural work and the consequent apportionment of responsibility. A most interesting feature of the volume is the number of well drawn plans showing the location of well-known monuments with regard to the position they occupy in reference to their environment, their scale and the observance of axes. A study of these plans brings an illuminating appreciation of basic facts easily lost in the perspective. Unfortunately the remainder of the illustrations are in too many cases not sufficiently clear; this is due, no doubt, at least in part, to the particular kind of paper stock used. In general it may be said that Mr. Bennett has made a valuable contribution to the understanding of a subject granted far too superficial an interest in many places.

* * * * *

The rich nature of the large amount of recent evidence furnished by discoveries in Crete, in Greece proper, and in Asia Minor, on the interesting subject of the Greek house, has given fresh impetus to the study and numerous articles have appeared written by English, German, French and Italian authorities and scattered throughout a host of archeological periodicals in various foreign languages; most of these periodicals are not as a rule accessible to the student, and since nothing in the form of a continuous history or summary of the evidence and of the deductions based upon it has been generally available, we are glad to welcome the appearance of Miss Bertha Carr Rider's *The Greek House, Its History and Development from the Neolithic Period to the Hellenistic Age.* (Octavo; pp. xii+272, ill. Cambridge, England; Cambridge University Press; 1916. New York; G. P. Putnam's Sons. $3.25.) The aim of the author has been to collect, collate, and present succinctly all the monumental evidence of importance from the Neolithic period onwards, as well as to give a summary of all the principal criticism to which it has been possible to obtain access, so that by this means the student of classic architecture may be given a broad purview of a most interesting domestic growth. From the nature of the work, the volume is not supposed to contain any new material; it is distinctly a compilation, but in the guise of a rewriting, and the result is surely worth while in the light of the vast amount of material which has thus been made available and in a sense consolidated. Harassed by a welter of bibliographic research that has driven us to most abstruse articles in out of the way corners, we naturally welcome with open arms any effort to reduce the number of possible places in which information upon a given subject might have to be sought, and usually the problem is not one of finding but of extricating the facts. Miss Rider has struck at one of the greatest weaknesses to which a noble profession can fall heir, and it is our fond hope that many another will be inspired to undertake in other widely trodden fields of research a similar task of simplification; if there is such a thing as efficiency in archeology, Miss Rider has hit upon it.

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APRIL 1918

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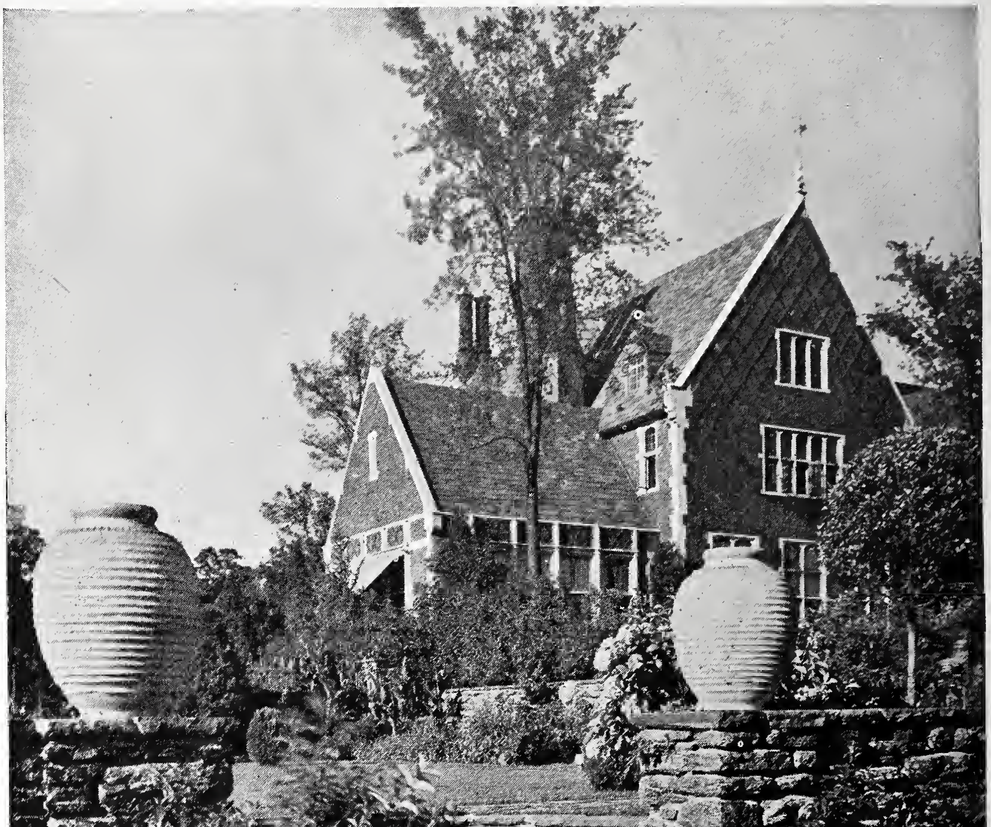

DETAIL OF SOUTH GABLE AND GARDEN—
RESIDENCE OF GEORGE ARENTS, JR., ESQ.,
RYE, N. Y. LEWIS COLT ALBRO, ARCHITECT.

THE
ARCHITECTVRAL
RECORD

VOLVME XLIII NVMBER IV

APRIL, 1918

THE RESIDENCE OF GEORGE ARENTS, JR. ESQ.

RYE. NEW YORK

LEWIS COLT ALBRO, ARCHITECT

By JOHN TAYLOR BOYD, JR.

AN effective free rendering of an English type of house, Elizabethan in its antecedents, such is the residence of Mr. George Arents, Jr., at Rye, New York, which was designed by Mr. Lewis Colt Albro, of New York City. It is situated on an estate of some eighty acres, three miles from the town, in that landscape of low hills and meadows broken with occasional outcropping ledges characteristic of most of the Long Island Sound region from the sea up to the mountains of New England, the hills rising higher as one proceeds northward. At Hillbrook the changes in level are not great, perhaps not over a hundred feet—a park-like country of meadows and clumps and groves, ancient pasture lands, with green turf here and there flashed by blue-gray hedges worn smooth by weather or ancient geological ice.

The house itself stands well back on the site, permitting a view over the owner's land. The entrance to it is through a long driveway of more than a quarter of a mile, leading from a gate and a gatekeeper's lodge; first past a flat farmland, partly tilled, then turning over a bridge that spans a brook in a grove of trees, out into the open again across a lawn to the house. There is no effect of a secluded entrance court or portico, such as one finds in many houses, but simply of a wide lawn all around the house, broken only by the roadway. The house is an irregular mass, with a fine high slate roof and brick chimneys; its walls are a colorful rough-texture brick, broken by limestone and some half-timber elements well diversified in the picturesque salients and gables and entrances.

Masses of shrubs screen the service court and wing, almost the only planting in the great lawn. The diversity already remarked as a characteristic of Mr. Albro's design is especially predominant

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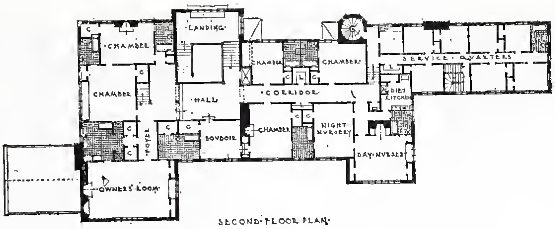
in the west end, where the long low gable and interesting wall treatment of slender colonnettes against brick of the sun room extension furnish one of the best pictures of the exterior. Of the entrance front the main elements are apparent in the photographs—the monumental stone entrance, vigorously modeled; the oddly contrasting side entrance, tucked away in a corner; the purple and green of the slate roof, all in excellent scale and remarkably consistent. Among the skillfully executed details are the dark reddish brick, with wide joints well raked out, the ironwork of the lamps and the leadwork of the leaders, and the English chimneys. Perhaps, as noted above, the sun room extension is the most charming bit of the exterior, the freest and most imaginative. The garden—principally a pool sunk in the lawn, its lining a clear robin's egg blue, and its walls and curbs a rough gray stone enlivened by big pots and jars in which grow rhododendrons—appears as an effective and most skillfully designed landscape on the modern English model. An extension of it is planned down the slope in the cross-axis of the pool. An interesting detail is the touches of color provided by the risers of the stonework steps, which are built of long, thin, bright red pressed bricks. Altogether admirable, the vigorous wholesome design of the garden pool, free as it is from finicky proportions or fussy details, is reached in the terrace on the south front, on which the hall and dining room windows open. A panel of greensward breaks the stone pavement of this terrace and a hedge of heliotrope behind the balustrade sets it off.

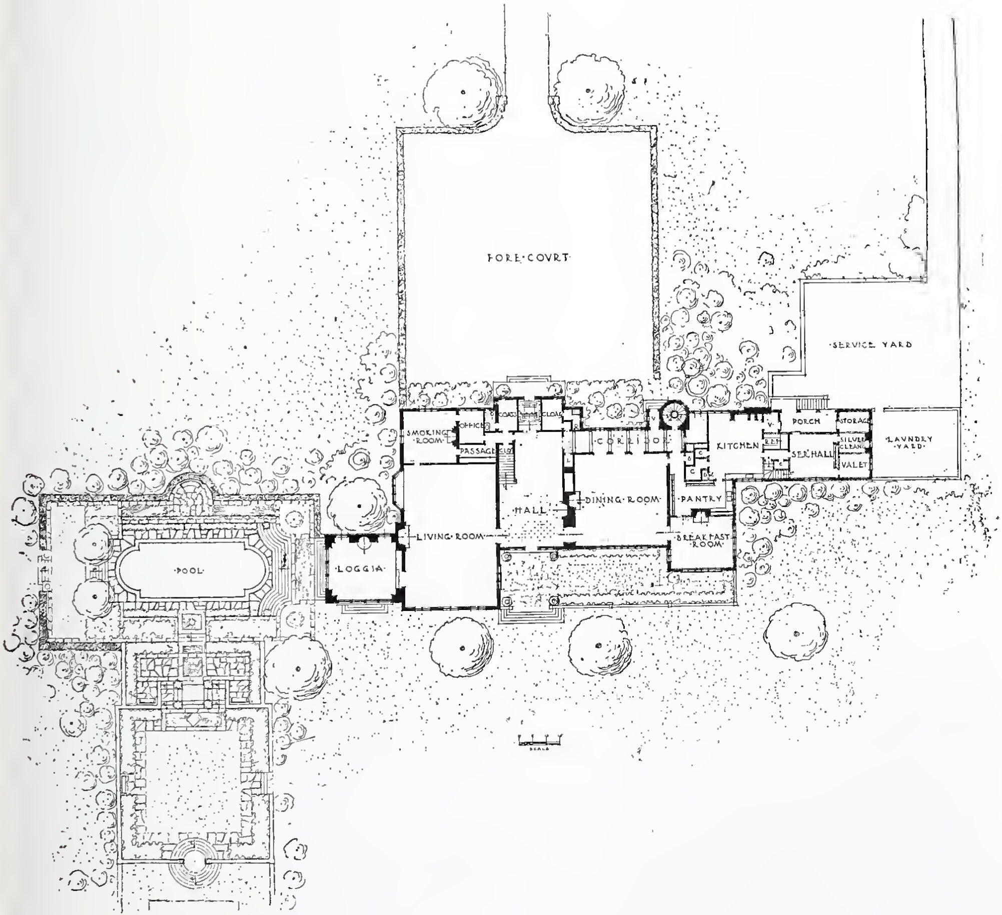
In reviewing the exterior, one feels that the hand of time is much needed in this south front. Now it seems somewhat restless, somewhat spotty, and one longs to see the vines grow and the stones weatherbeaten till their tones harmonize with the brick. Very little stone is necessary to enliven brick walls, a fact which the entrance of Hillbrook well proves. The zigzag lines and checkered patterns of the quoining are hard to reconcile with the delicacy of the Gothic proportions, especially with their light and shade. Of course, the precedents to the contrary would seem overwhelming, but nevertheless the broader, more regular and more symmetrical pattern of the sun room wing, in which wall and window and roof are tied with the architectural scheme of decoration and blend so admirably together, could hardly be improved upon. For such a scheme of decoration stands upon its own merits; while the more conventional, historic method of design of the south front needs the effects of time and of vines to soften the quoins, concealing them here and there or else softening their angles with tiny spots and shadows. All this much-needed harmony will come in the course of years when the full effect of the planting is apparent.

The interior of Hillbrook displays the same high level of artistic merit and the same consistency and finish as characterize the exterior. The plan opens out from the entrance into large rooms, the larger ones impressing the visitor with an unusual spaciousness. One of the means employed to attain harmony is the free use of dark wood paneling throughout the ground floor of the house. At Hillbrook this has been carried farther than usual, until the effect is of the dark, rich atmosphere that one associates with the historic Elizabethan style. The designer has at the same time been able to invest the separate rooms with plenty of individual interest, which becomes apparent on better acquaintance. The splendid character of the entrance hall, really a large room, is evident in the photograph. The detail of the stairway is executed with great delicacy, which is found in only a very few historic examples of the style. Too many architects do not realize that some of the old English woodworkers attained an exquisite refinement hardly surpassed by any Gothic craftsmen. Until very lately such work was conceived in a rather heavy, even clumsy and grotesque spirit; but today it is giving way to effects of refinement and grace, while still retaining the imaginative playfulness that is one of the charms of the style.

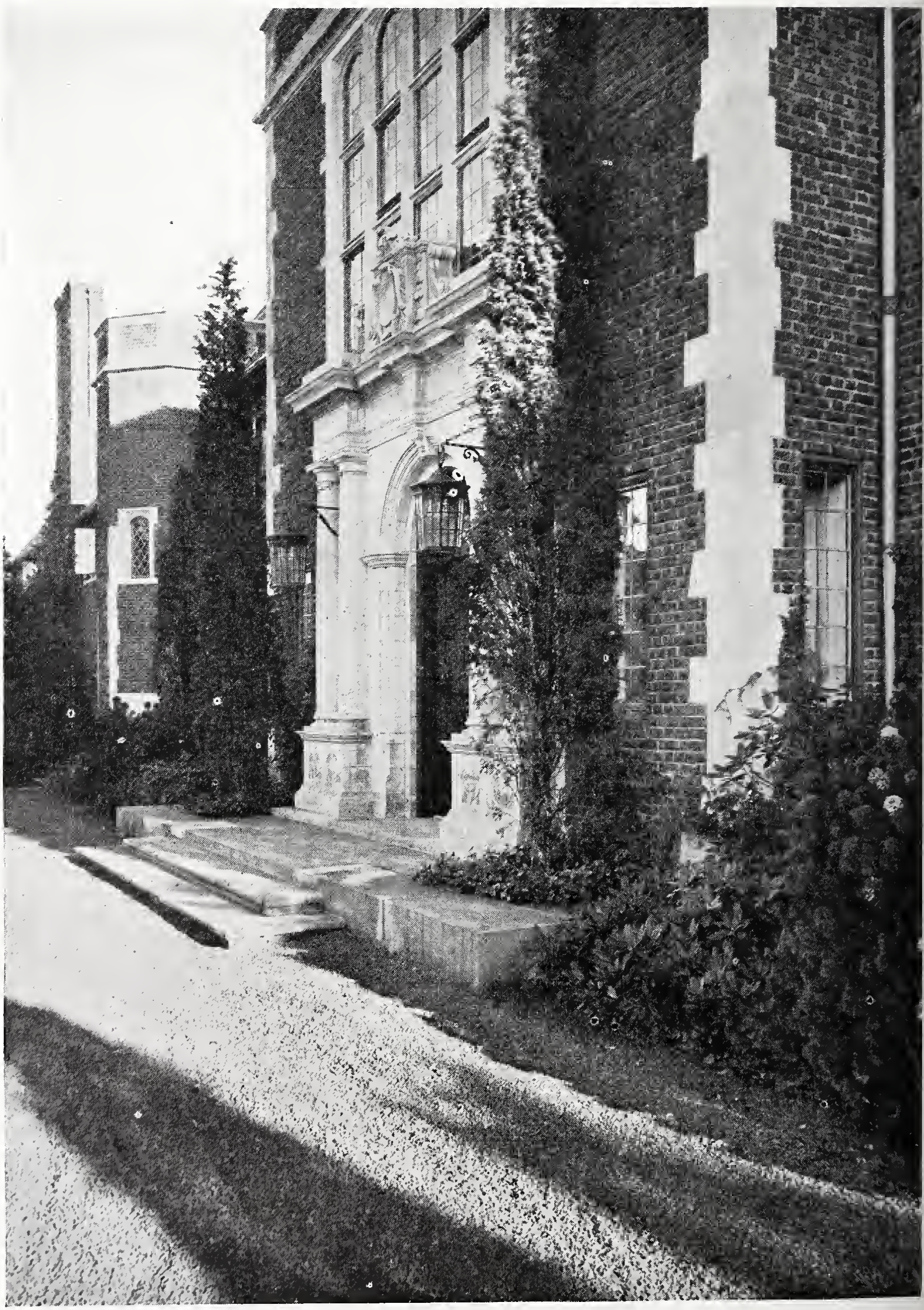
The large living room is a splendidly able, strong design, in one scale. The



SECOND FLOOR PLAN



FIRST AND SECOND FLOOR PLANS—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N, Y. LEWIS COLT ALBRO, ARCHITECT.



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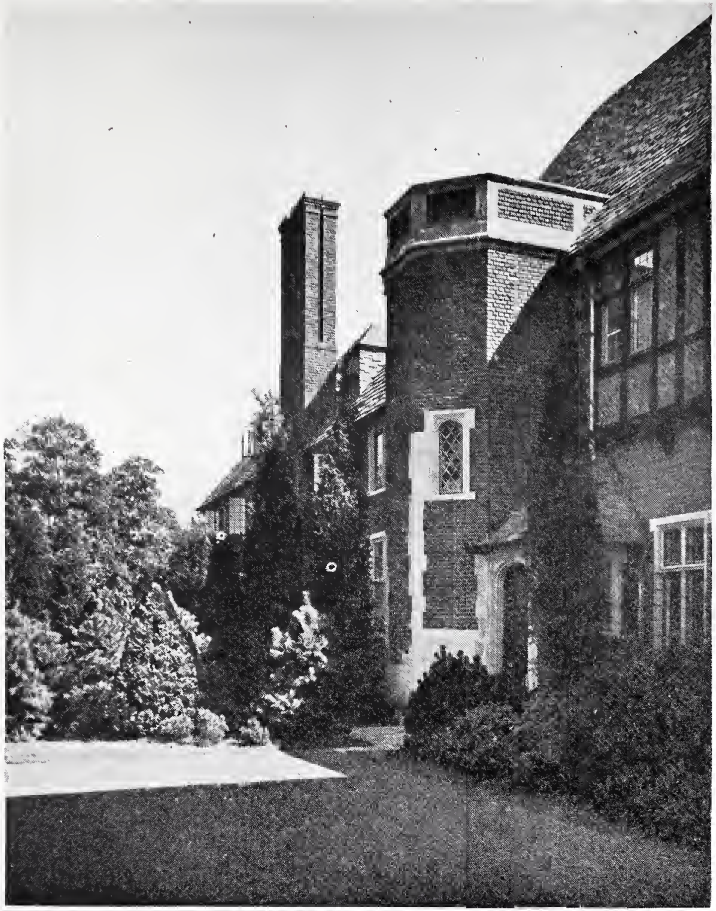

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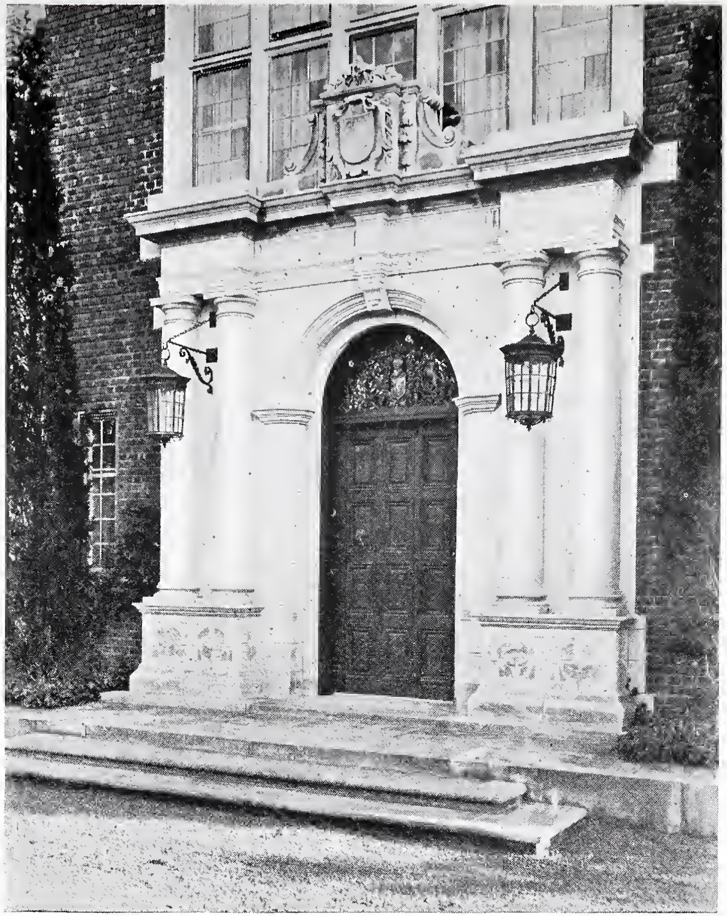

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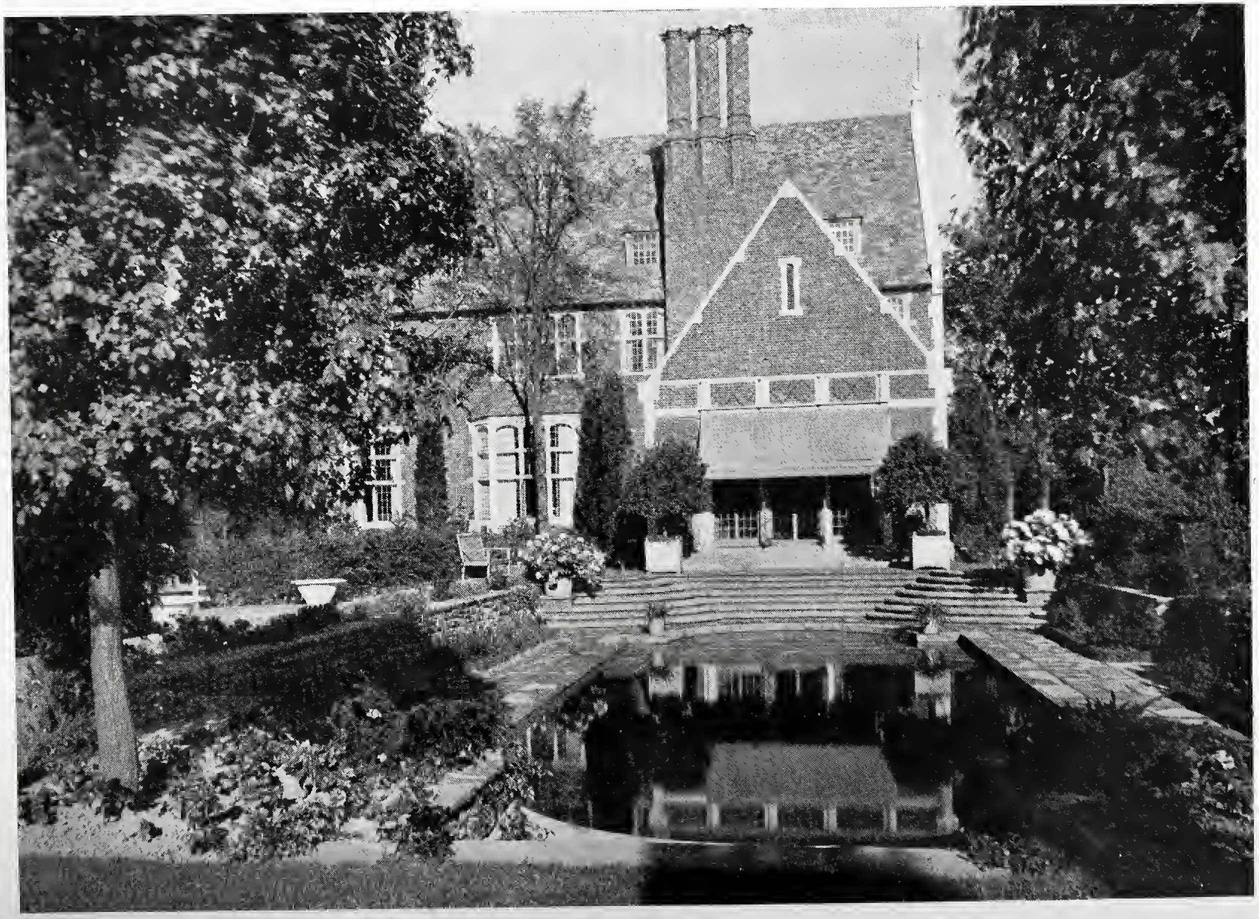

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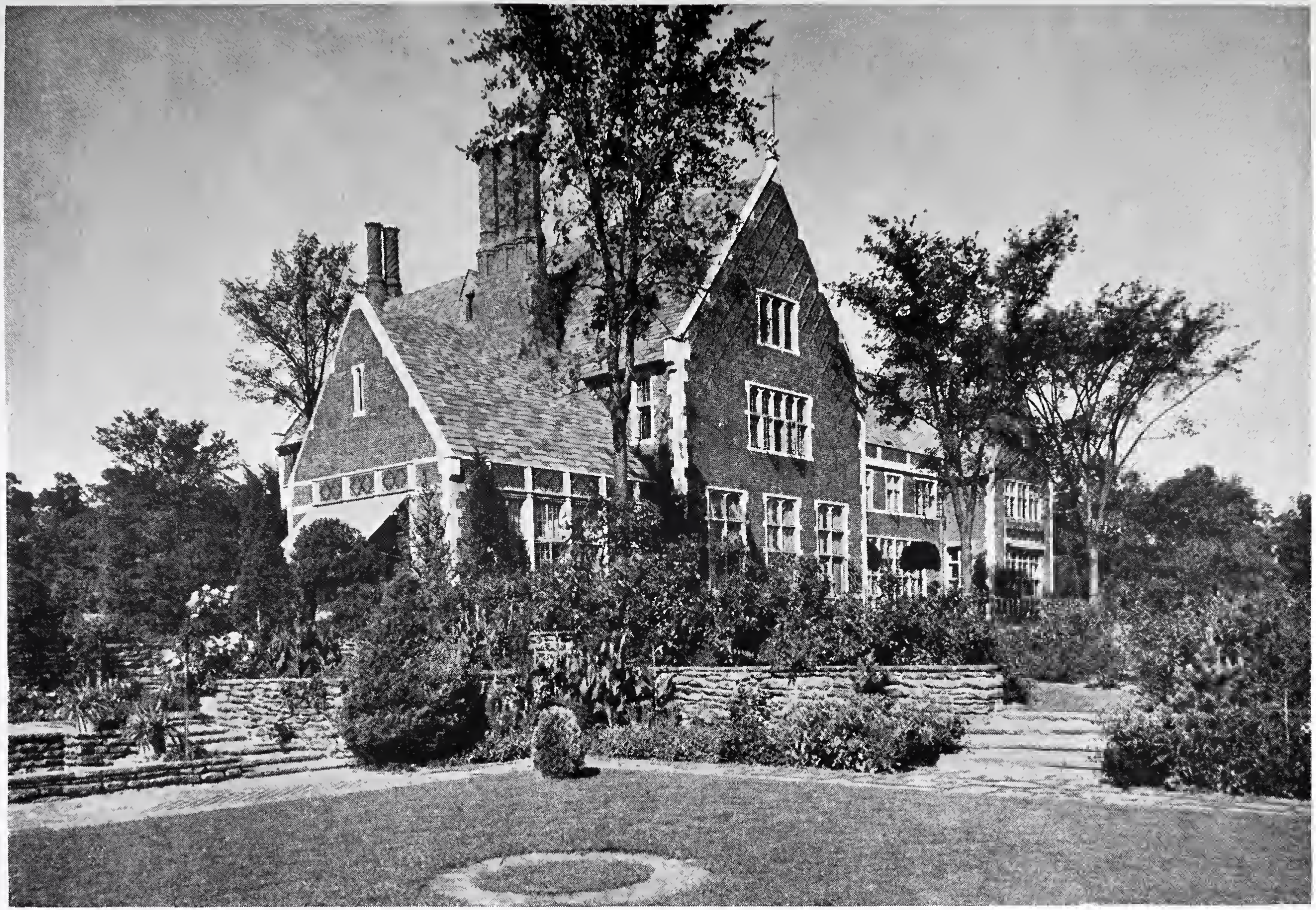

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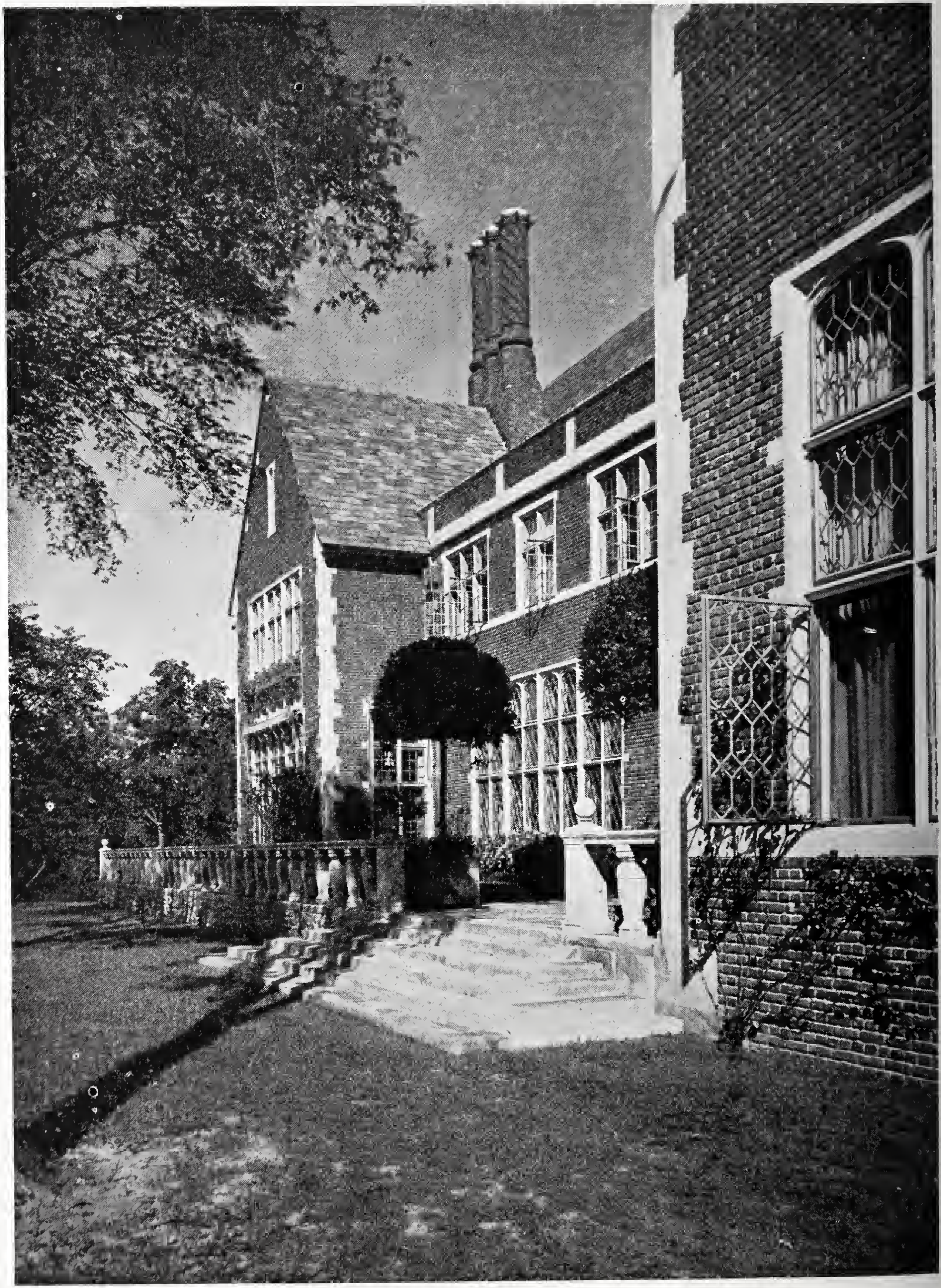

SOUTH TERRACE — RESIDENCE OF
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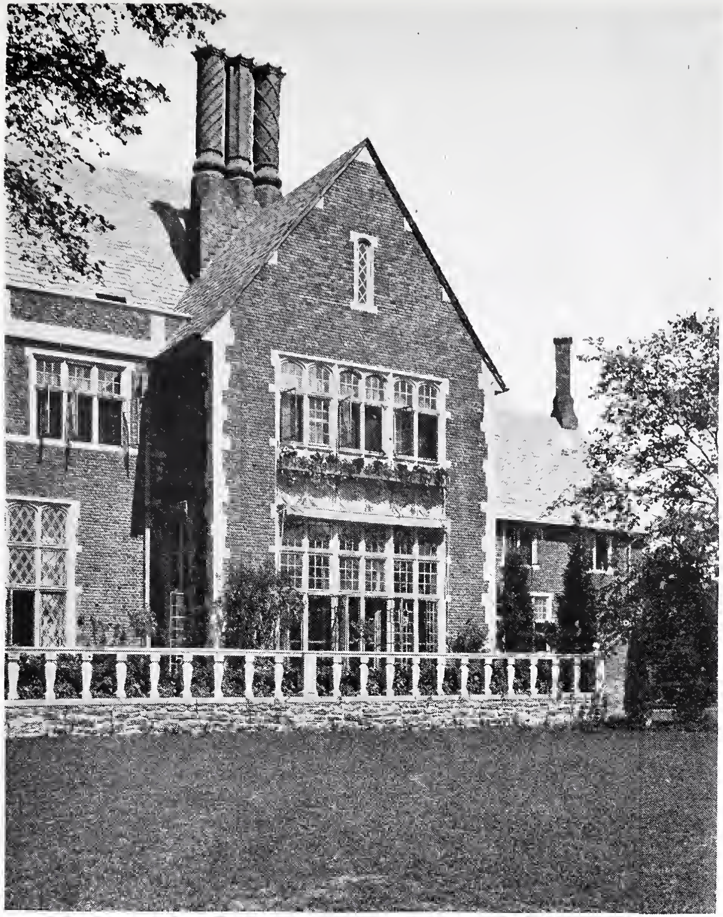
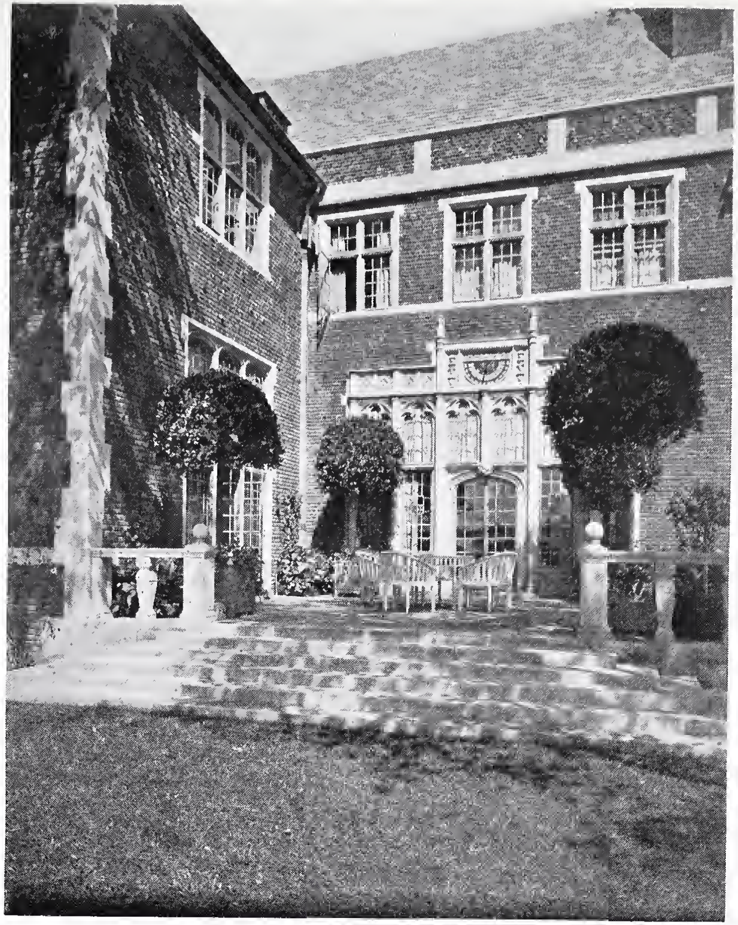
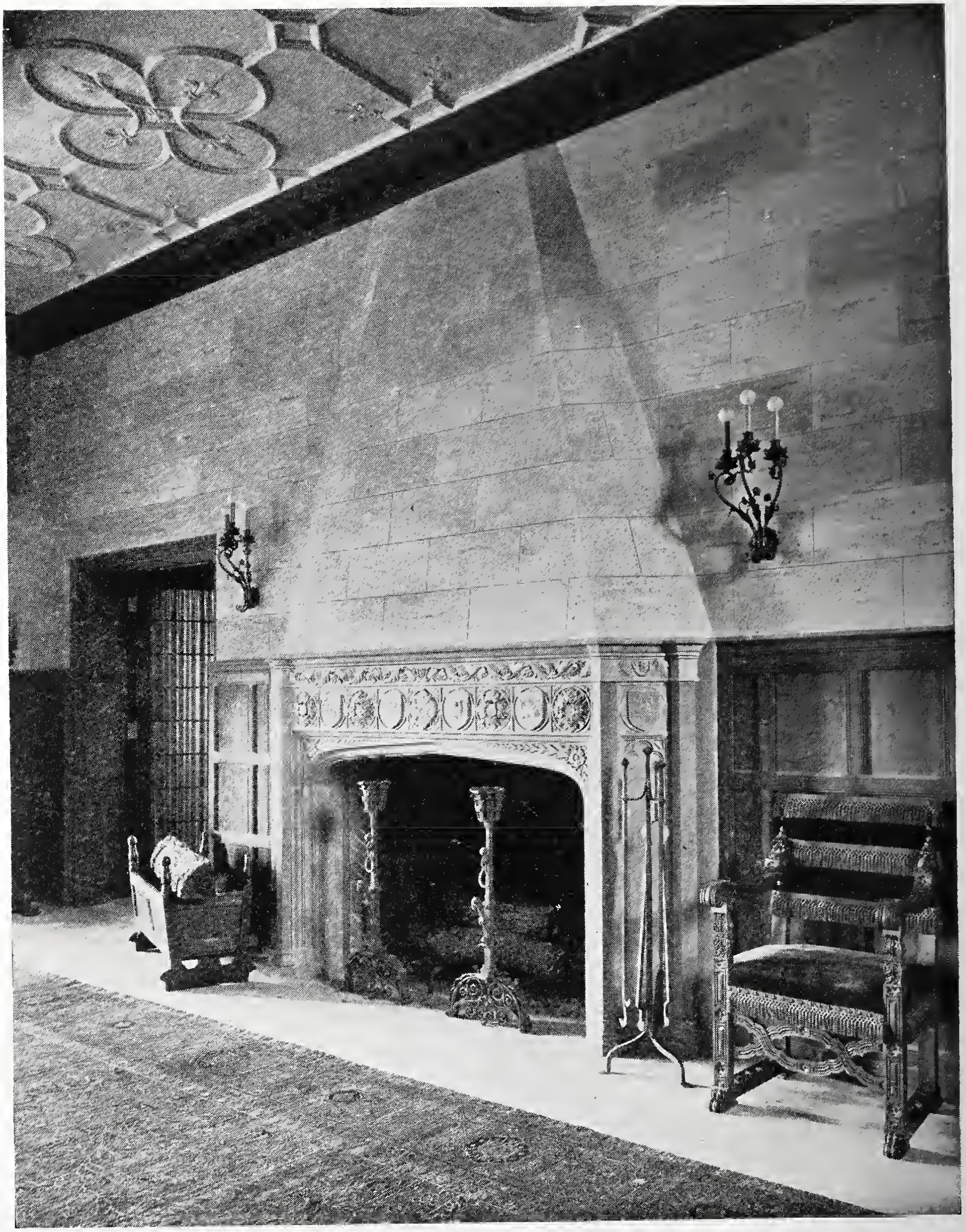


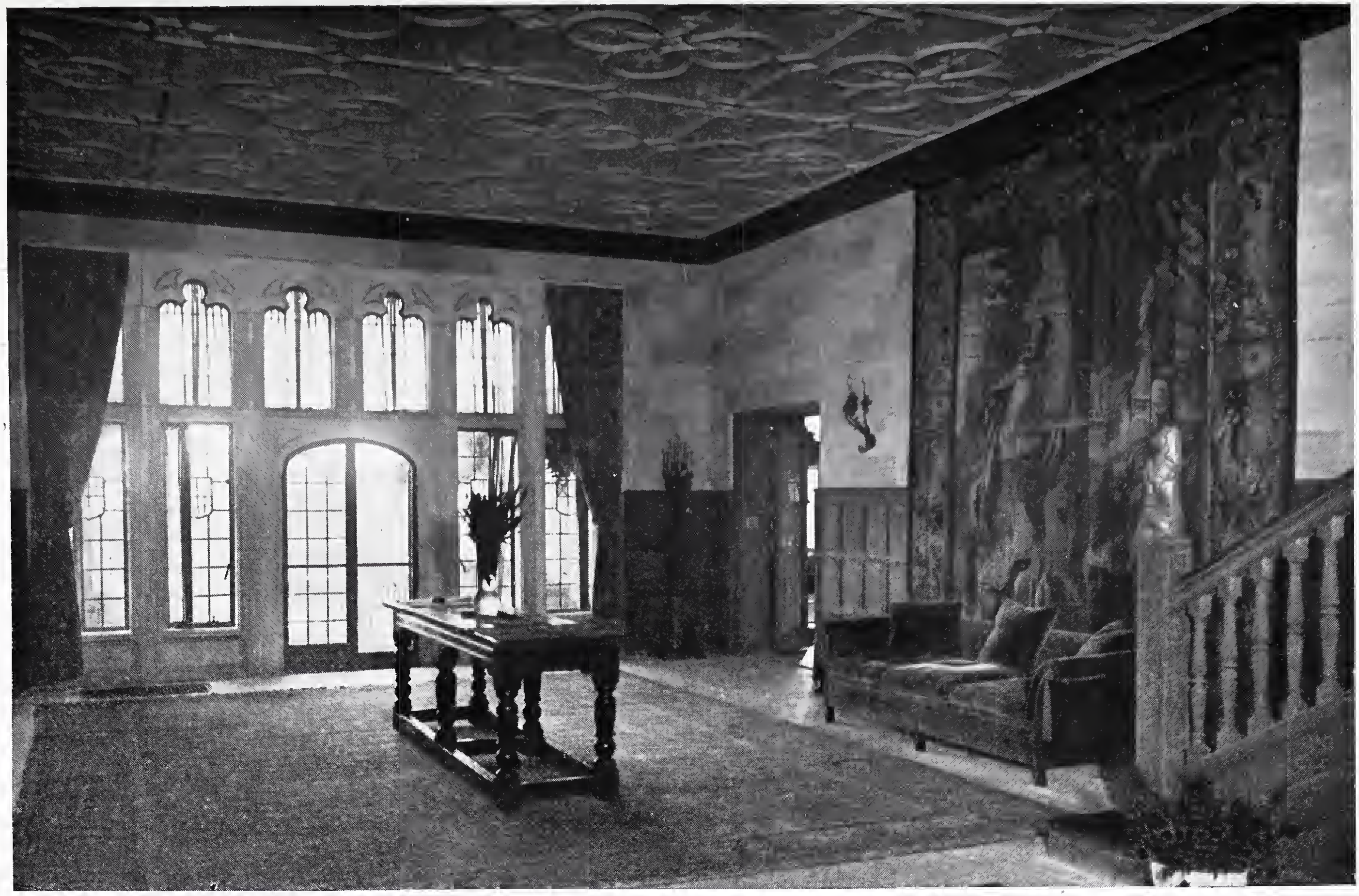
BREAKFAST ROOM GABLE, ON SOUTH TERRACE—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.
Lewis Colt Albro, Architect.



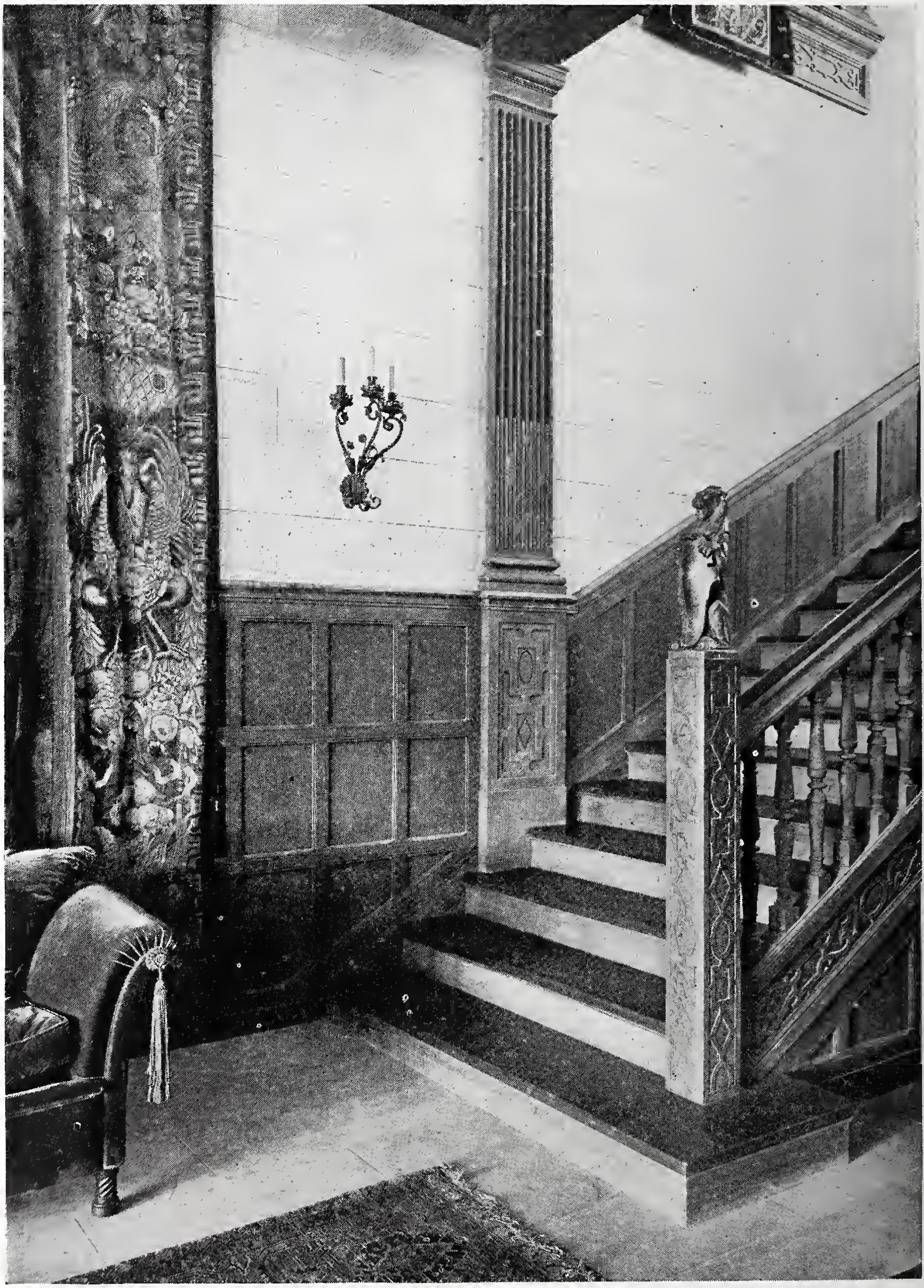
HALL ENTRANCE, FROM SOUTH TERRACE—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.
Lewis Colt Albro, Architect.



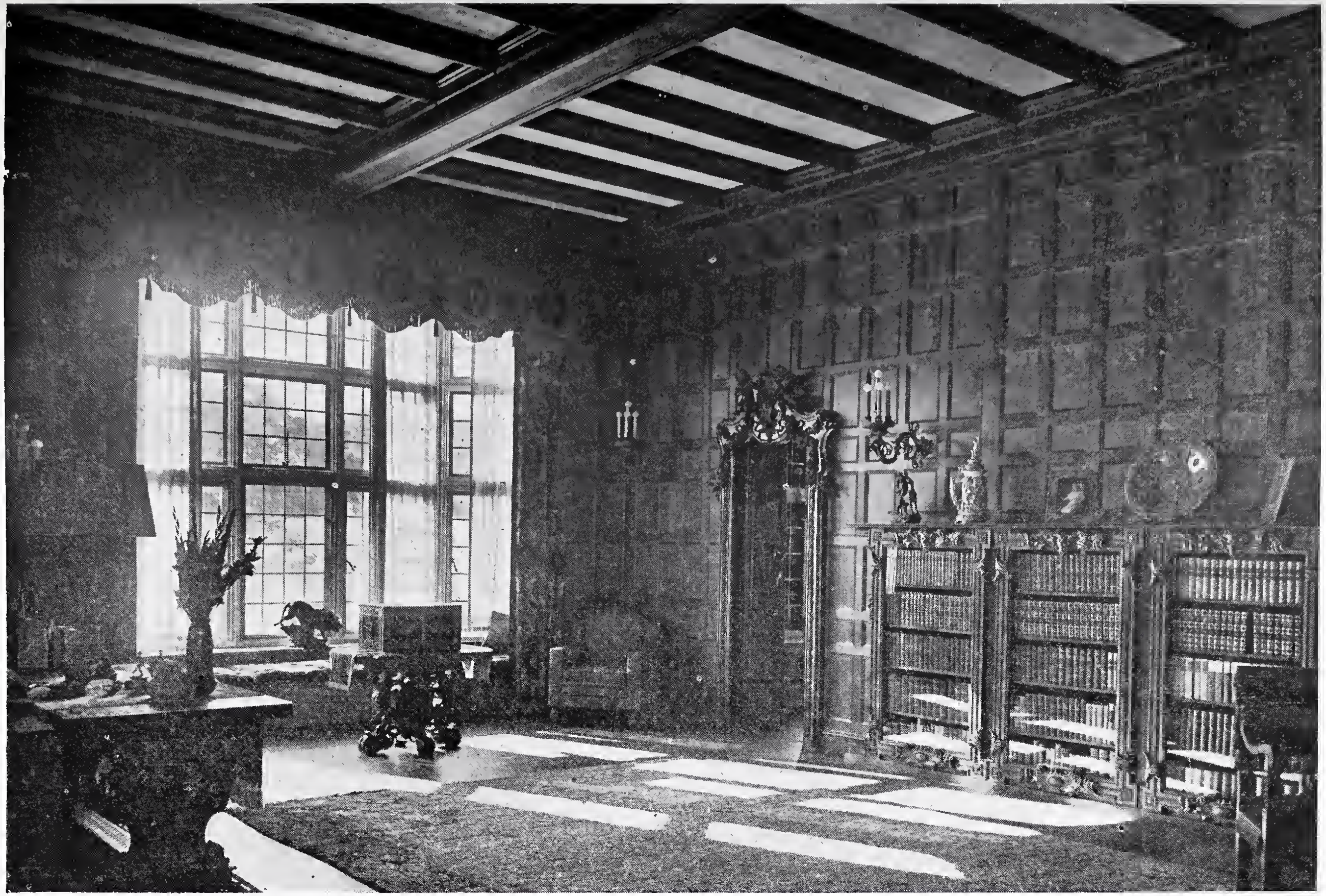
FIREPLACE IN HALL—RESIDENCE OF
GEORGE ARENTS, JR., ESQ., RYE, N. Y.
LEWIS COLT ALBRO, ARCHITECT.



HALL, SHOWING SOUTH WINDOW—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y. LEWIS COLT ALBRO, ARCHITECT.



MAIN STAIRS — RESIDENCE OF
GEORGE ARENTS, JR., ESQ., RYE, N. Y.
LEWIS COLT ALBRO, ARCHITECT.



LIVING ROOM — RESIDENCE OF
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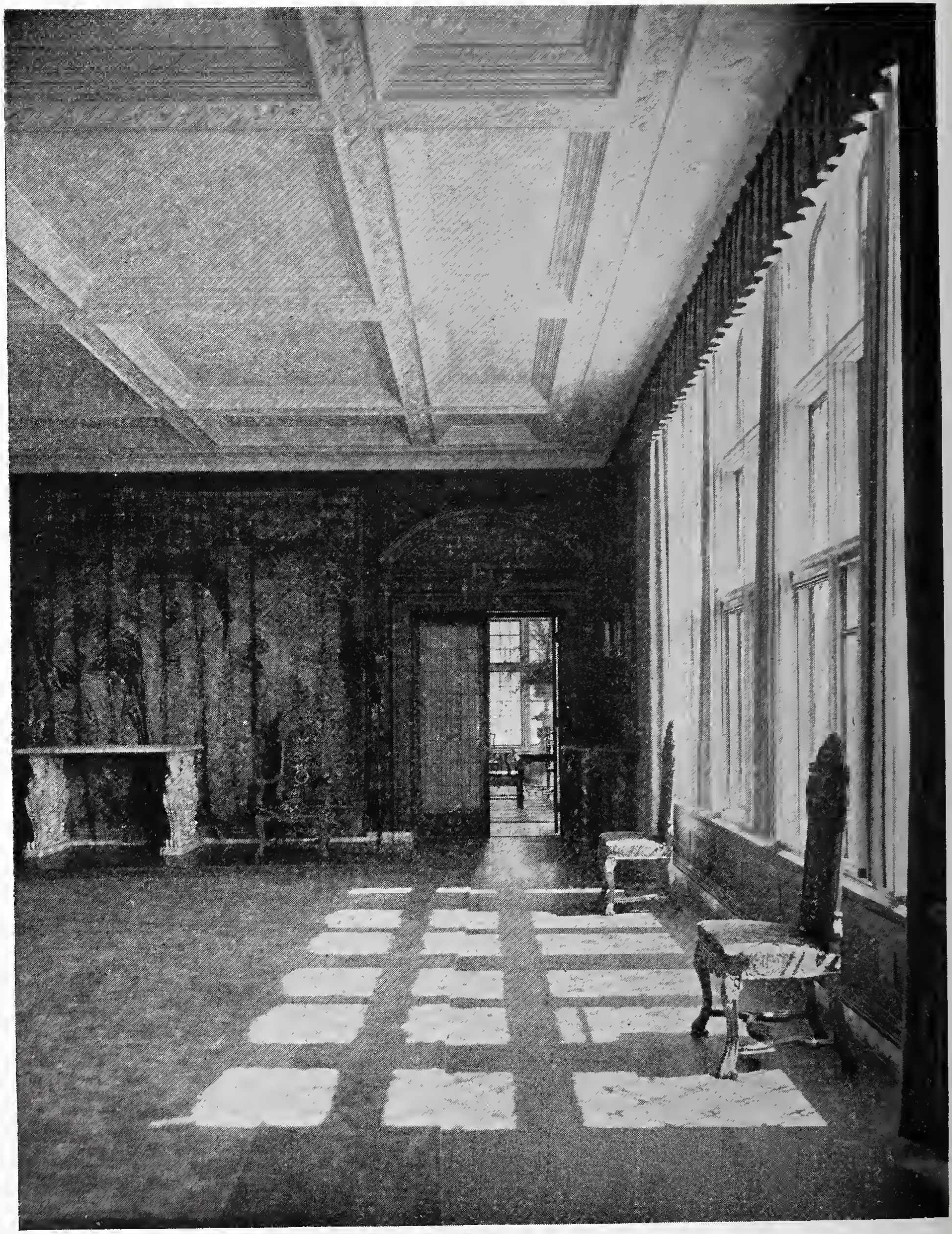
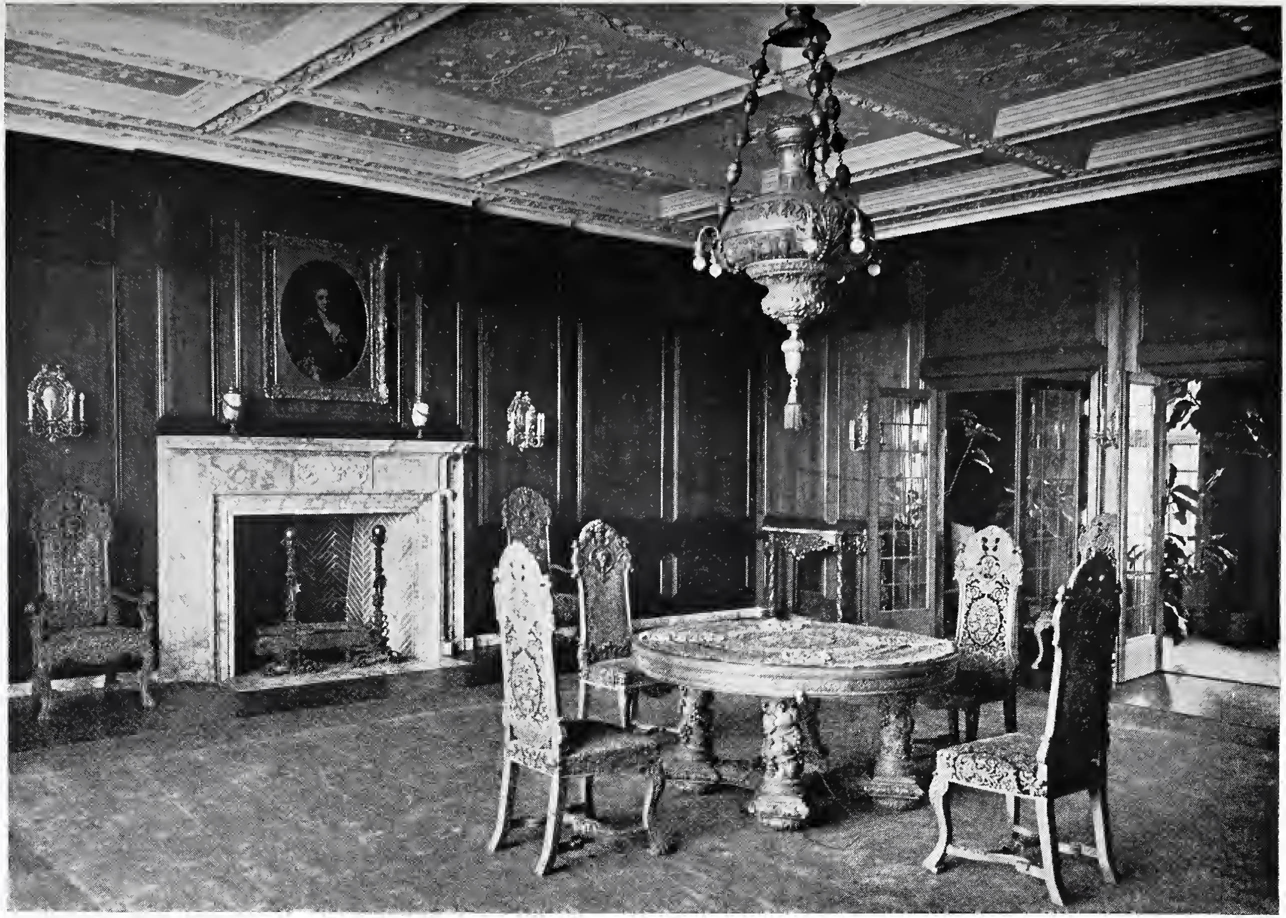
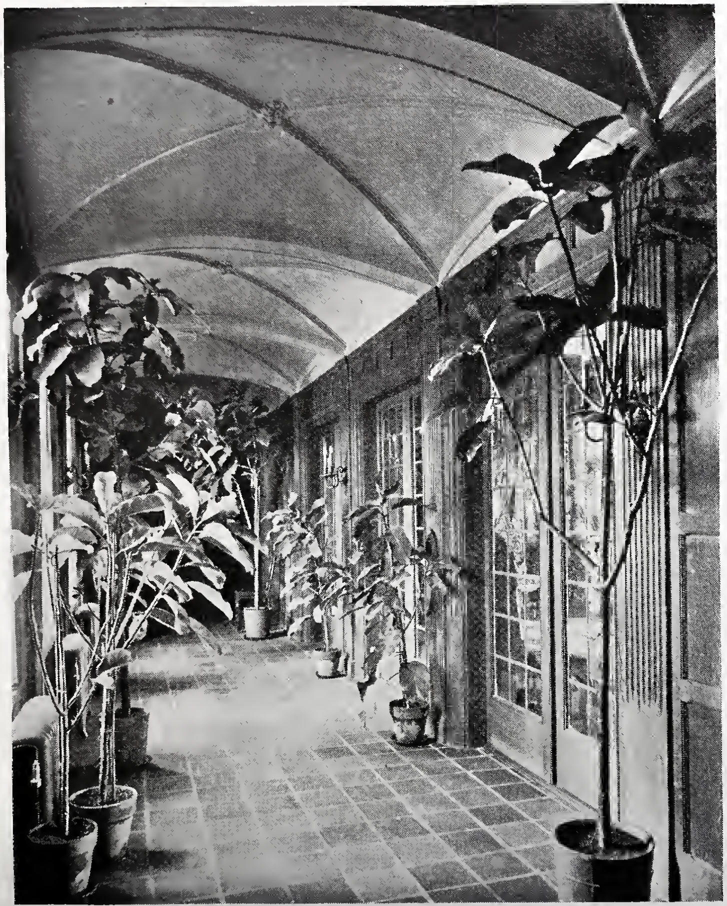
LEWIS COLT ALBRO, ARCHITECT.



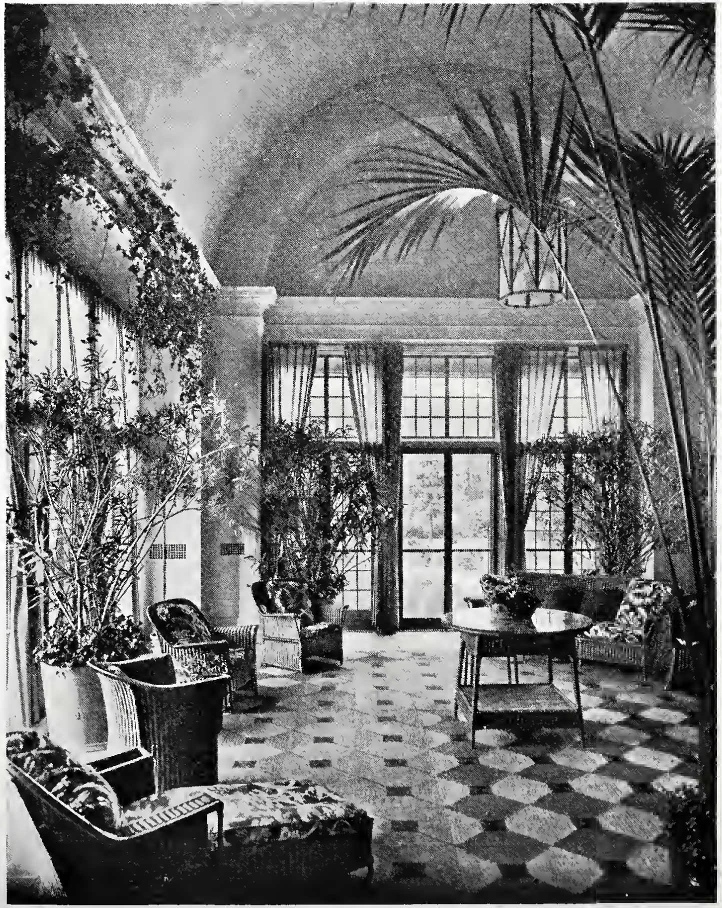
DINING ROOM, LOOKING TOWARD BREAKFAST ROOM—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y. LEWIS COLT ALBRO, ARCHITECT.



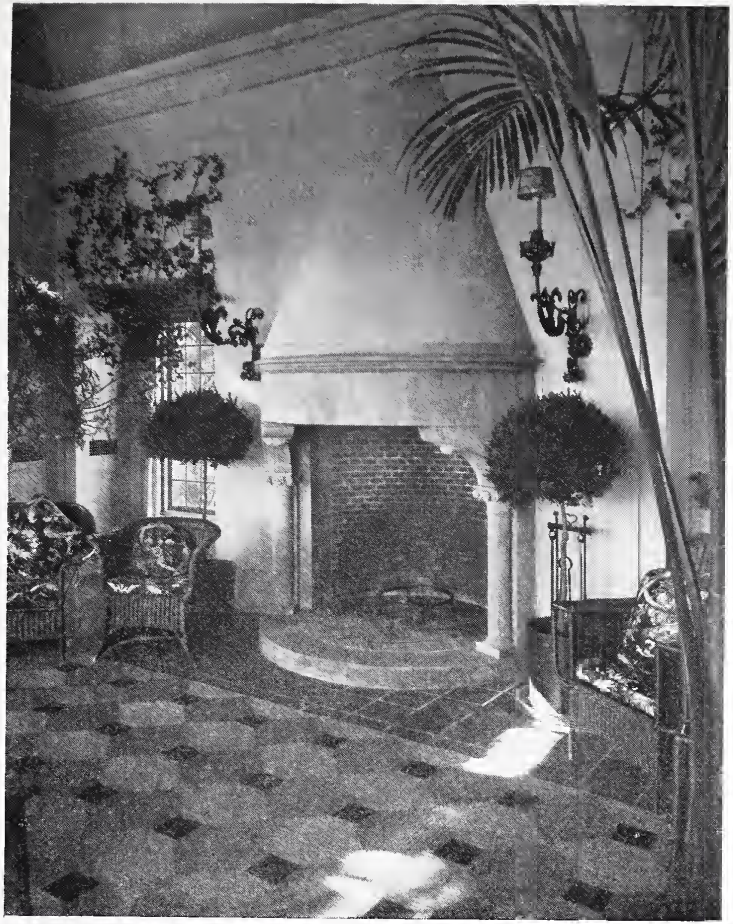
GENERAL VIEW OF DINING ROOM—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y. LEWIS COLT ALBRO, ARCHITECT.



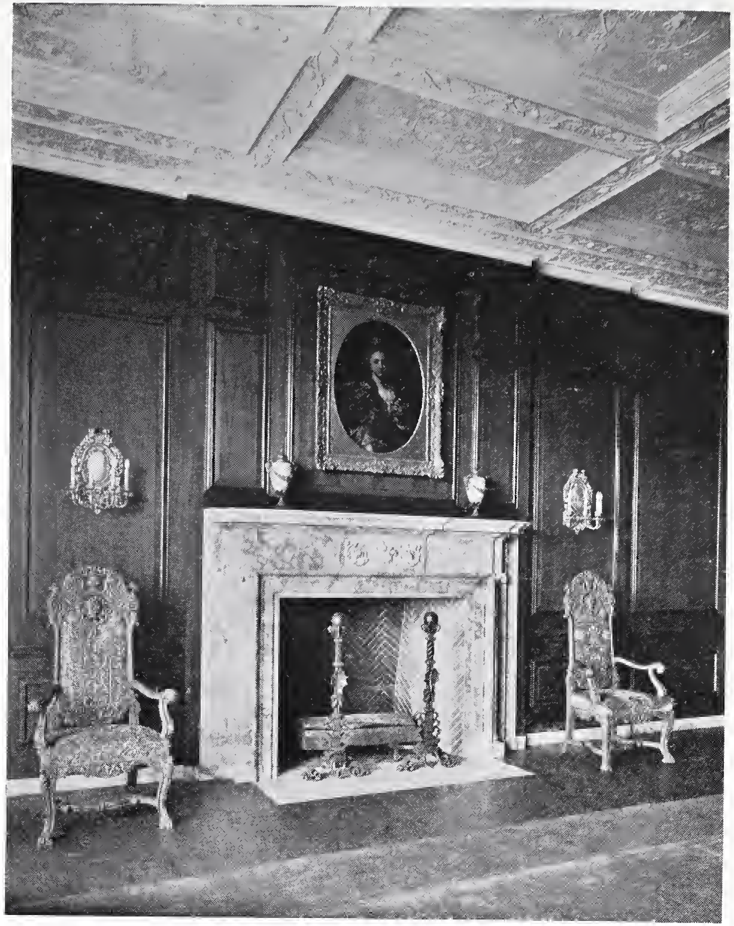
OLD ENGLISH CORRIDOR BEHIND DINING ROOM—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.
Lewis Colt Albro, Architect.



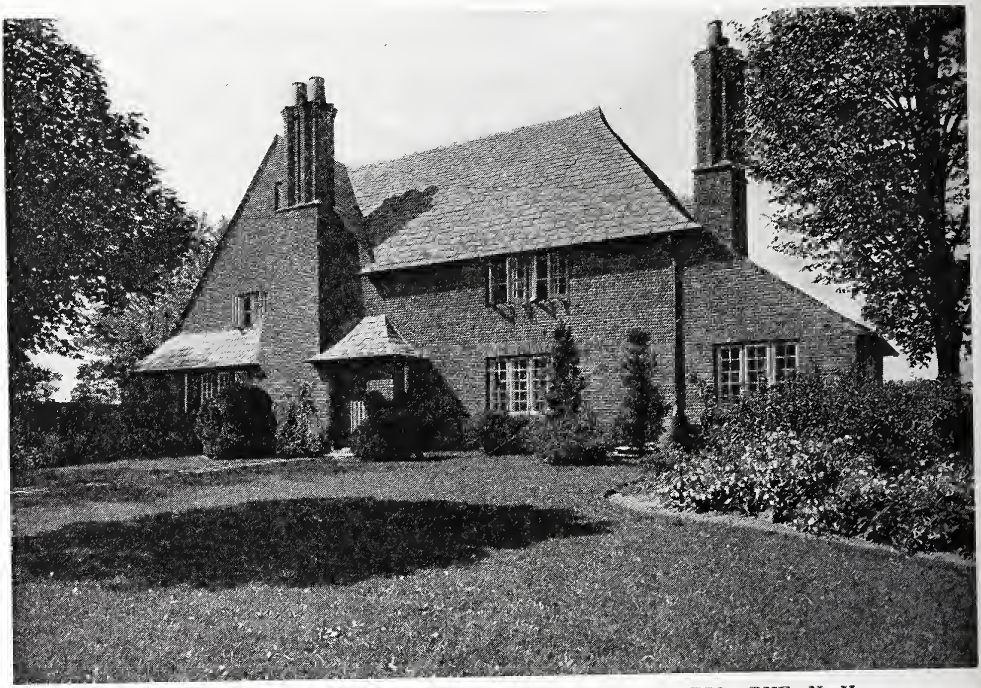
LOGGIA—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.
Lewis Colt Albro, Architect.



FIREPLACE IN LOGGIA—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.
Lewis Colt Albro, Architect.



DINING ROOM FIREPLACE—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.
Lewis Colt Albro, Architect.



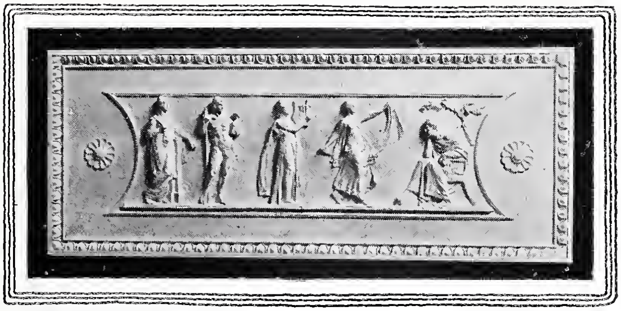
GATE LODGE—RESIDENCE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.
Lewis Colt Albro, Architect.

oak paneled walls are relieved by the old wood carvings used as door frames instead of the more conventional architrave. In the photograph the ceiling beams appear heavy, but in reality they do not look so in the room. Off the living room opens a small den, paneled to the ceiling in gumwood, a wood which is coming more and more to be used in interiors.

One of the best features of the house is the sun room, in flat walls, with a vaulted ceiling of slightly bluish tone and a fireplace of limestone—all simply modeled as an excellent contrast to the oak paneling elsewhere. The ironwork lighting fixtures, slightly touched with color and gilt, are among the most interesting things in the room.

In the dining room, decoration of a more modern period has been employed. The change occurs without abruptness, for the dark walnut paneling harmonizes with the design of the hall and living room; and the fine plaster ceiling has been executed in that modern revival of old English plasterwork recently introduced into this country with such successful results. The plasterwork is yellowish in color, like old ivory. Off the dining room opens a glazed-in alcove, or breakfast room, and along the north side is a little low, vaulted, oak-paneled corridor, running from the service wing to the entrance door, that engages attention through its delicate, intimate charm.

Among recent houses Hillbrook is a very marked success. One cannot admire the high technical skill displayed in it without taking even more satisfaction in the subordination of the skill to the conception of quiet harmony and richness that has been the main impulse of the design in all the details. Mr. Albro has avoided all purpose to impress or overcrowd the picture with interest. Thus the description of it is soon finished. What impresses one is the whole —a remarkable rendering, freely and boldly executed, of the English historic style.



The STILLMAN THEATRE CLEVELAND, OHIO

Geo. B. Post & Sons, Architects

By

W. SIDNEY WAGNER

I RECALL, while on a voyage to Europe, meeting a gentleman who was endeavoring to organize and finance a company to build and operate in the United States a chain of theatres to be devoted exclusively to the exhibition of motion pictures. He admitted that he had as yet found no one who would seriously entertain his project. Since that time the motion picture has inherited the earth. Mechanical and photographical difficulties, then considered unsurmountable, have been overcome; in photography the results obtained have been little short of wizardry. The production of film dramas has reached levels of costliness, complexity and length undreamed of a few years ago.

The planning and equipment of motion picture theatres, mainly because of the various State and city regulative ordinances, and because of the owner's demand for correct projection and vision, have, in the main, kept pace with the development in the other branches of the new art. But architects have been laggard in taking advantage of the architectural and decorative possibilities of the motion picture theatre. With but few exceptions, they have reproduced the stereotyped design and decoration found in the typical dramatic theatre.

The recently completed Stillman Theatre in Cleveland, Ohio, is a revolt against the placid acceptance of the theory that the public's taste is hopelessly bad and that when it goes pleasure-seeking it demands blatant and flashy surroundings.

In the Stillman Theatre the condition presented to the architects precluded the possibility of developing a clear cut, satisfactory solution of the motion picture auditorium problem. It was required that, while the theatre was to be devoted primarily to the exhibition of motion pictures, it must nevertheless be so planned that it could be readily and economically converted into a dramatic theatre; its acoustics must be such as would permit of the successful presentation of the highest class of concerts and recitals; it was to be provided with one balcony in addition to the main auditorium floor; and, finally, it must have a seating capacity of approximately two thousand. The practical, mechanical, and architectural solution of these various conditions has left its clear impress upon the form of the auditorium.

It is not my intention to give a general description of the purely structural and mechanical features of the theatre. The given conditions were such that, with one or two noteworthy exceptions, upon which I shall touch later, its plan and equipment necessarily follow, in a general way, the precedents established in the earlier houses, of which the Strand

Theatre, New York City, is a familiar and worthy example. Mr. Thomas Lamb, who was the architect of the Strand Theatre, was also associated with Geo. B. Post & Sons in the theatre under discussion, in the capacity of consulting architect.

One point in the structural design of the balcony merits passing mention. The balcony is of the usual modern cantilever type of construction. The cantilever girders proper rest upon a large transverse truss, which spans practically the entire seating width of the auditorium. This truss does not extend to and rest upon the masonry side walls of the auditorium, as is usual in general practice, but is supported at each end upon a column adjoining each side aisle and placed about five feet away from the inside face of the wall. This arrangement permits of the introduction of a slightly inclined passageway from the mezzanine promenade level to the lowest transverse aisle of the balcony, and on each side of the balcony between the end of the truss and the face of the side wall. Besides thus providing two additional fire exits of the best type, these passageways are of distinct advantage from an operating standpoint. They eliminate the usual tiring climb to the balcony levels; they bring the entrance to the balcony down to the same level as the mezzanine promenade and within sight of the main entrances to the auditorium, all of which makes the balcony seats at least as desirable as those on the main floor.

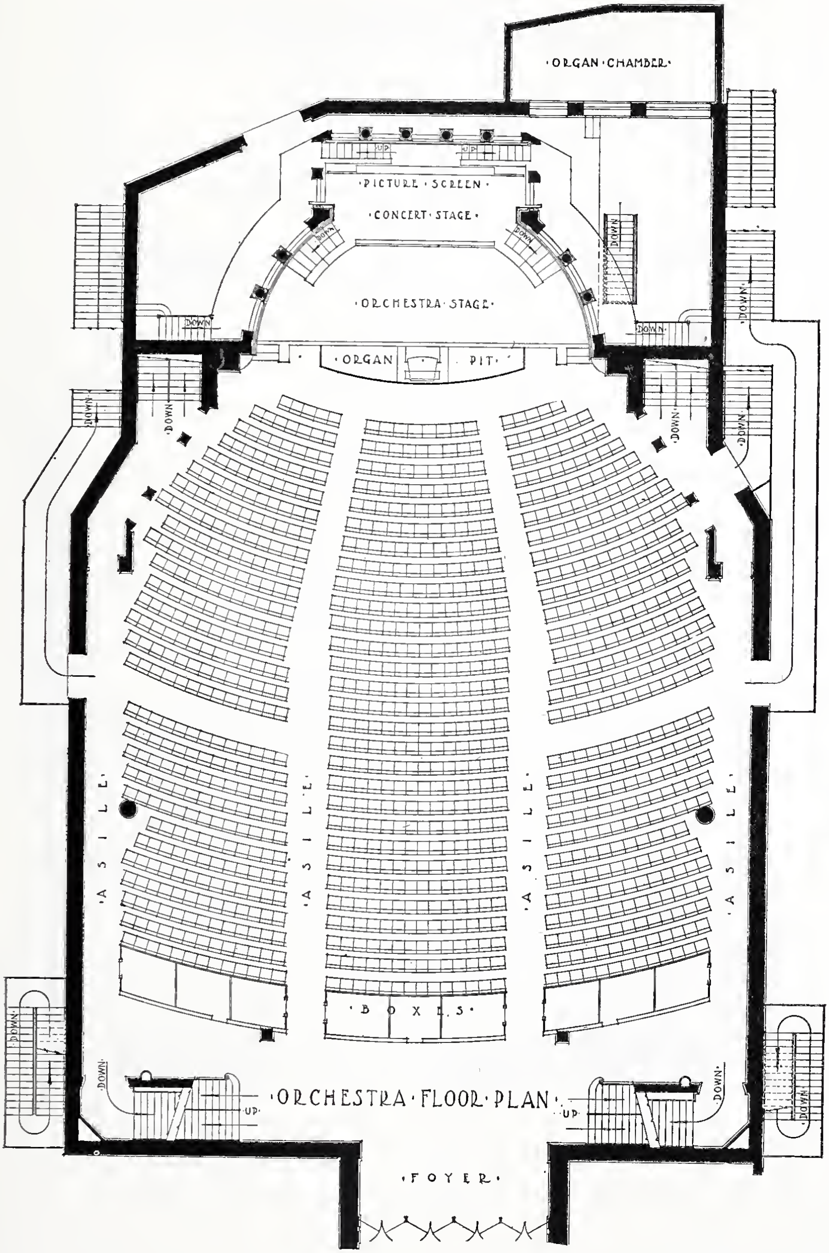
This brings us to another interesting feature, which, so far as I know, is found elsewhere in but one American theatre and there in embryo only—in the Strand Theatre, New York City. This is the mezzanine promenade in the triangular sectioned space formed by the lines of the balcony steppings and the ceiling underneath. Reached from each side of the main floor by a light railed, broad, easy stairway—always so dear to the heart of the consciously well-gowned woman—and equally accessible to the balcony, it provides a comfortable democratic promenade and lounge, a promenade which, while sheltered from the brusque contact of the main floor, is yet an integral part of it and permits "seeing and being seen." In this respect it has a flavor of the European theatre, where the promenade of this type is such a time-hallowed and distinctive feature, a flavor accentuated here by the intimate scale and light freedom of the architecture, enhanced by the comfortable, usable arrangement of the furniture, the restful masses of palms and flowers.

This type of promenade is unquestionably an improvement upon the types with which we are all familiar in this country, usually located in some corner of the vague and many storied space back of the balconies. The Stillman promenade, opening out before the view of the visitor as he steps past the entrance doors, being the focal point to which he is drawn by inclination, comfortable, intimate, remains in his memory as the embodiment of the character of the theatre.

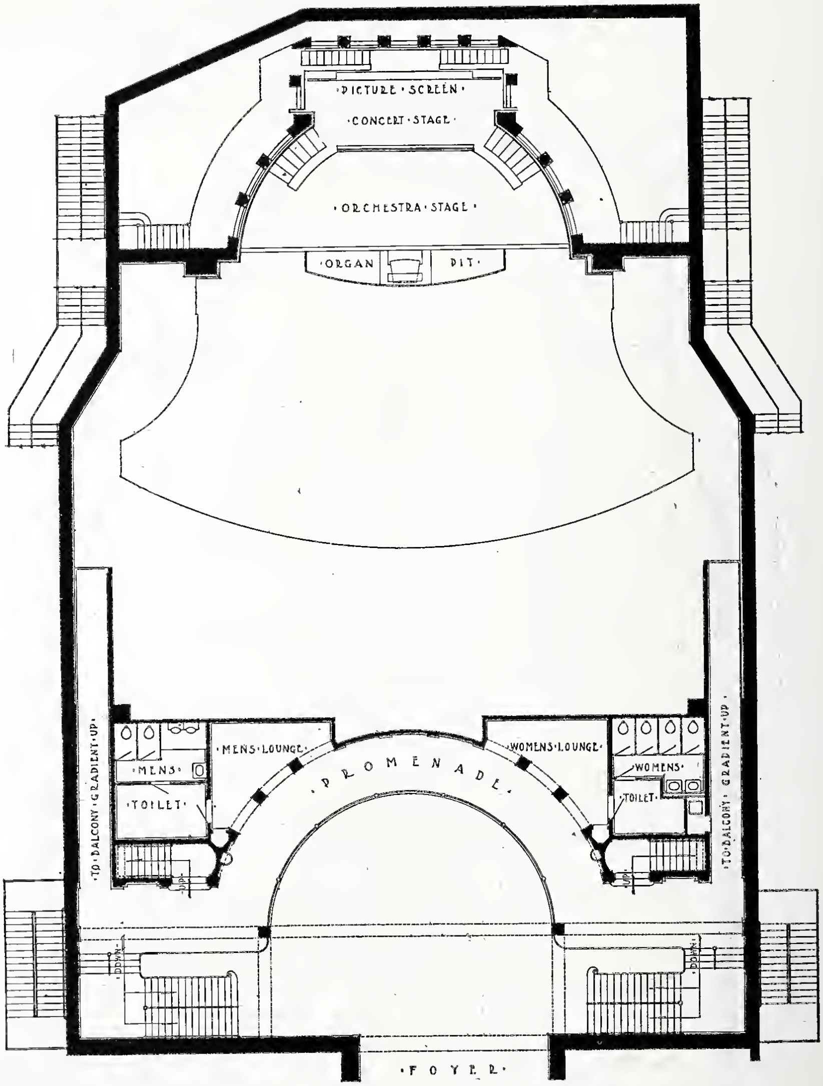
As one of the requirements of the building was that it must have good acoustic properties, it was determined to depart from the conventional types of theatre ceilings and strive for a form which, in conjunction with the flanking proscenium walls, would more nearly approximate the form known in geometry as the paraboloid of revolution. This determination was strengthened by a study of the researches in acoustics by Professor Wallace C. Sabine, Hugh Tallant and others.

The form of auditorium adopted is shown in the section drawing reproduced on another page. The architects, who had been asked to guarantee the acoustic qualities of the auditorium, took the precaution to specify a patented sound-absorbing material in the wall and ceiling panels. The extensive tests of the acoustics of the completed room proved to be so satisfactory, however, that none of this material was used.

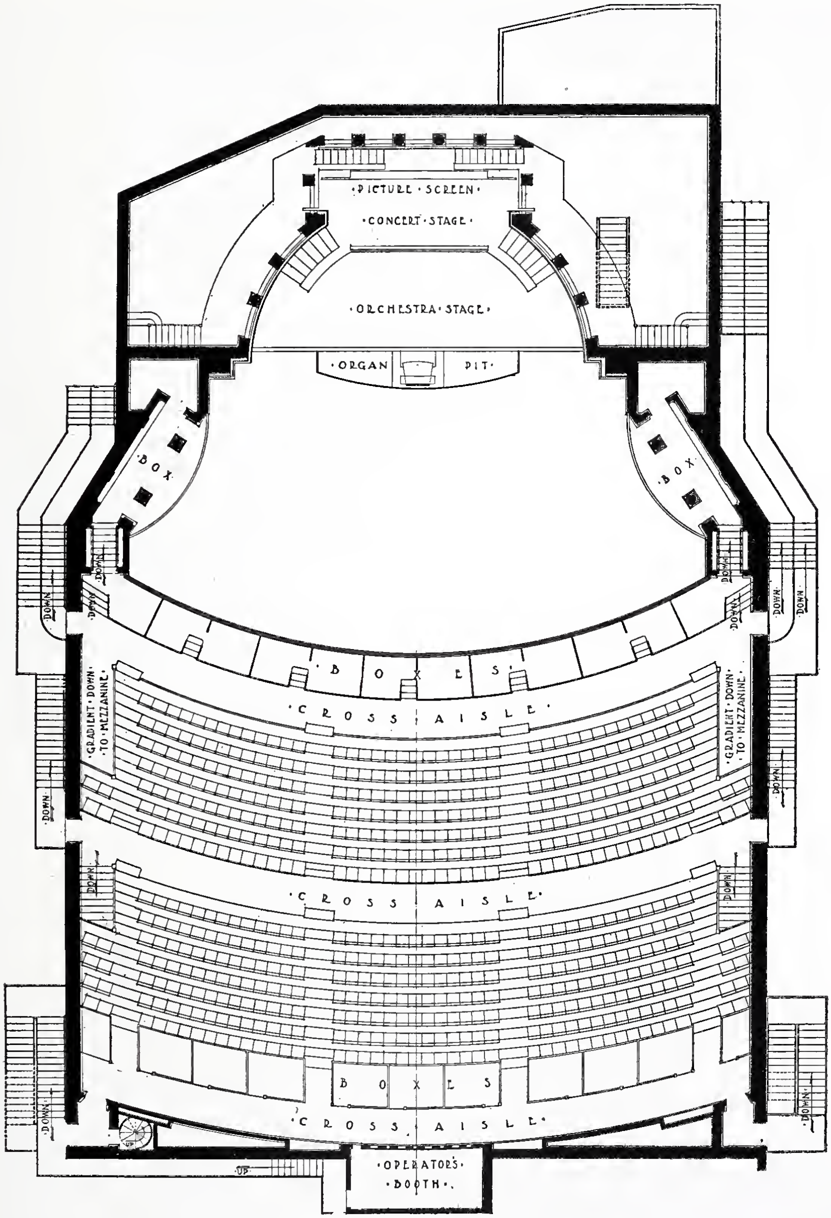
The condition that the theatre be readily convertible into a dramatic house has left its impress throughout. It can be seen in the retention of the form of the proscenium arch and in the introduction of proscenium boxes, both features of very doubtful value in the motion picture theatre. It can be seen also in the alignment of the seating; the



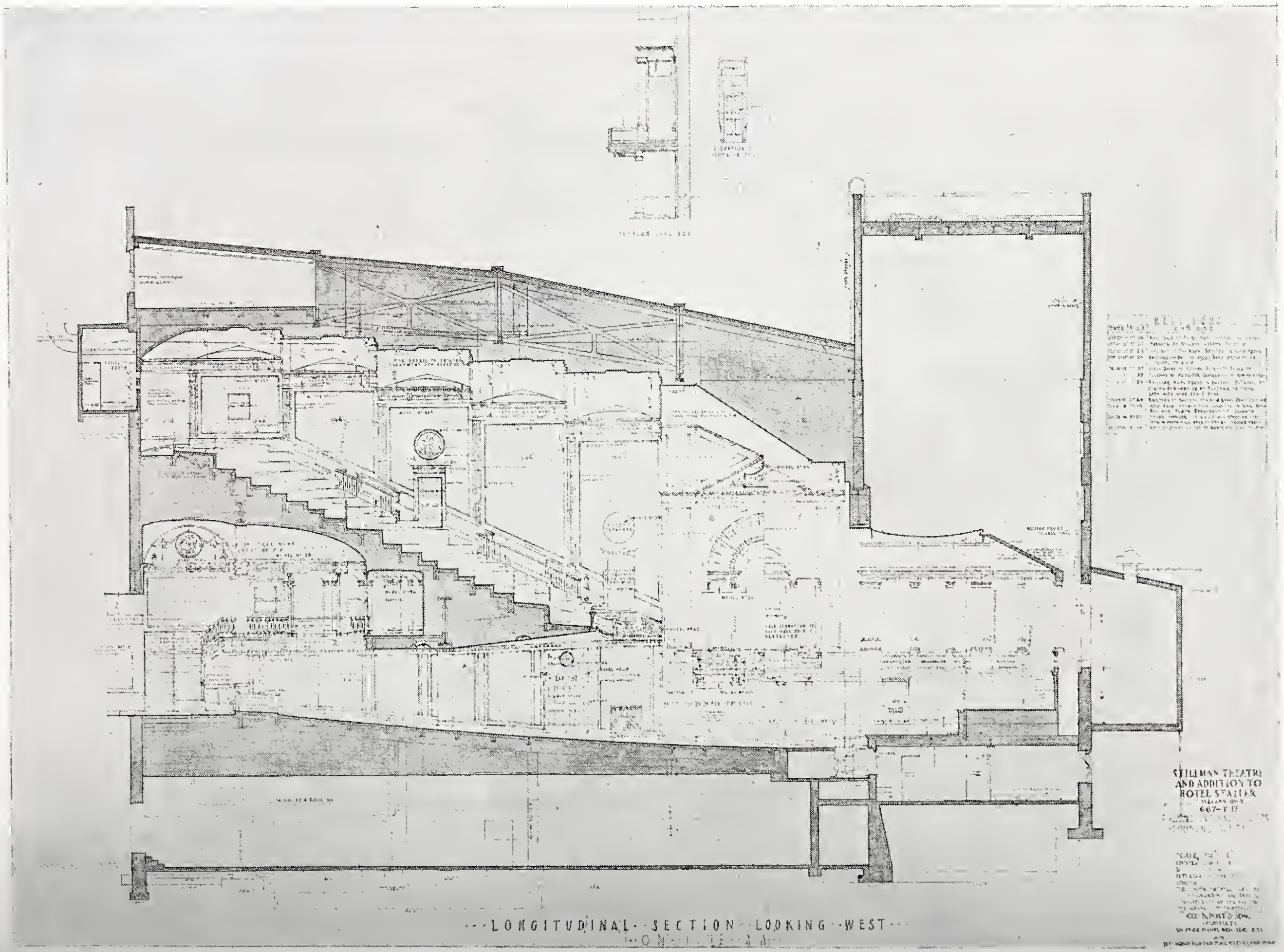
ORCHESTRA FLOOR PLAN—STILLMAN THEATRE, CLEVELAND, OHIO.
GEO. B. POST & SONS, ARCHITECTS.



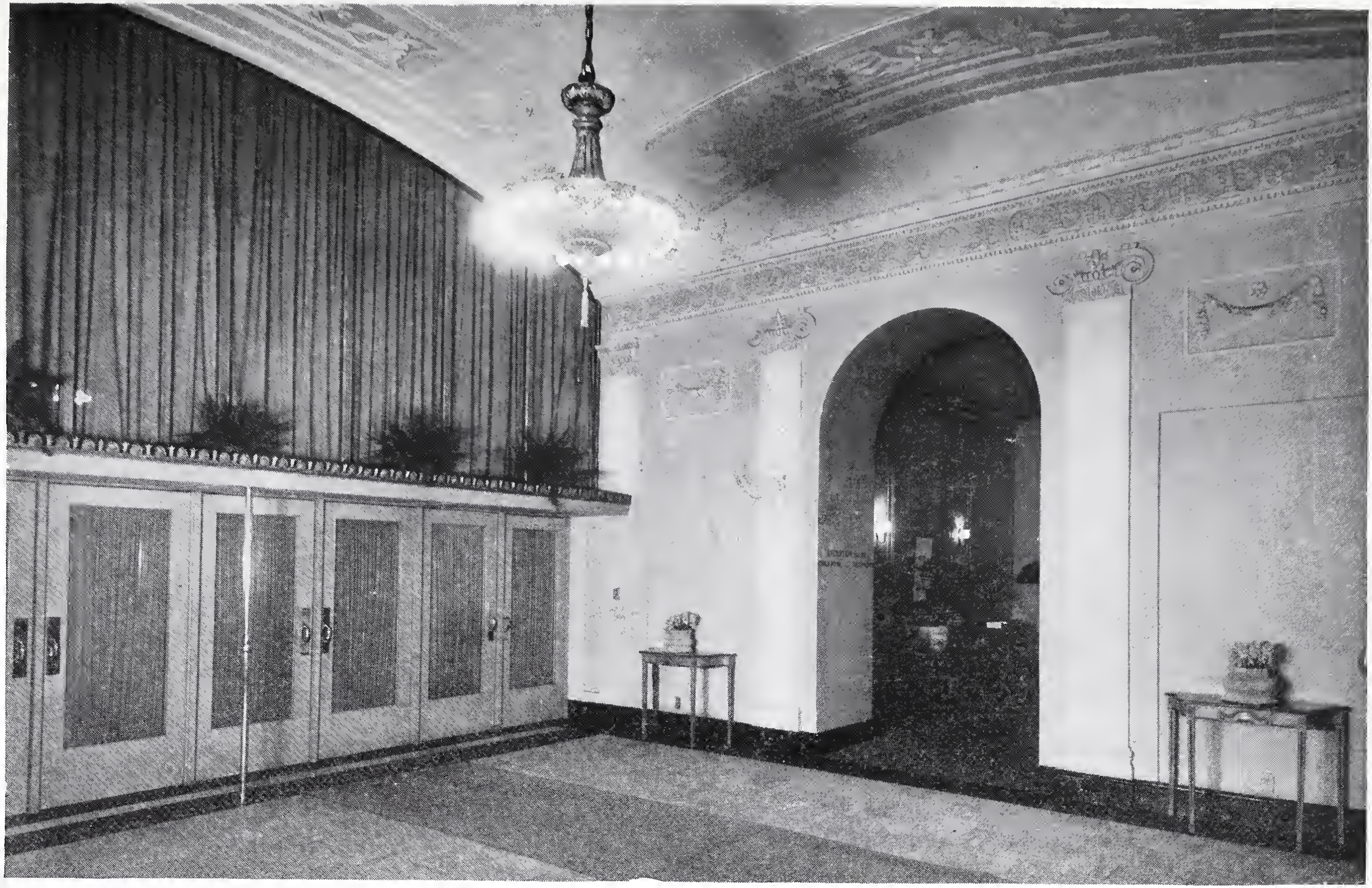
MEZZANINE FLOOR PLAN—STILLMAN THEATRE, CLEVELAND, OHIO.
GEO. B. POST & SONS, ARCHITECTS.



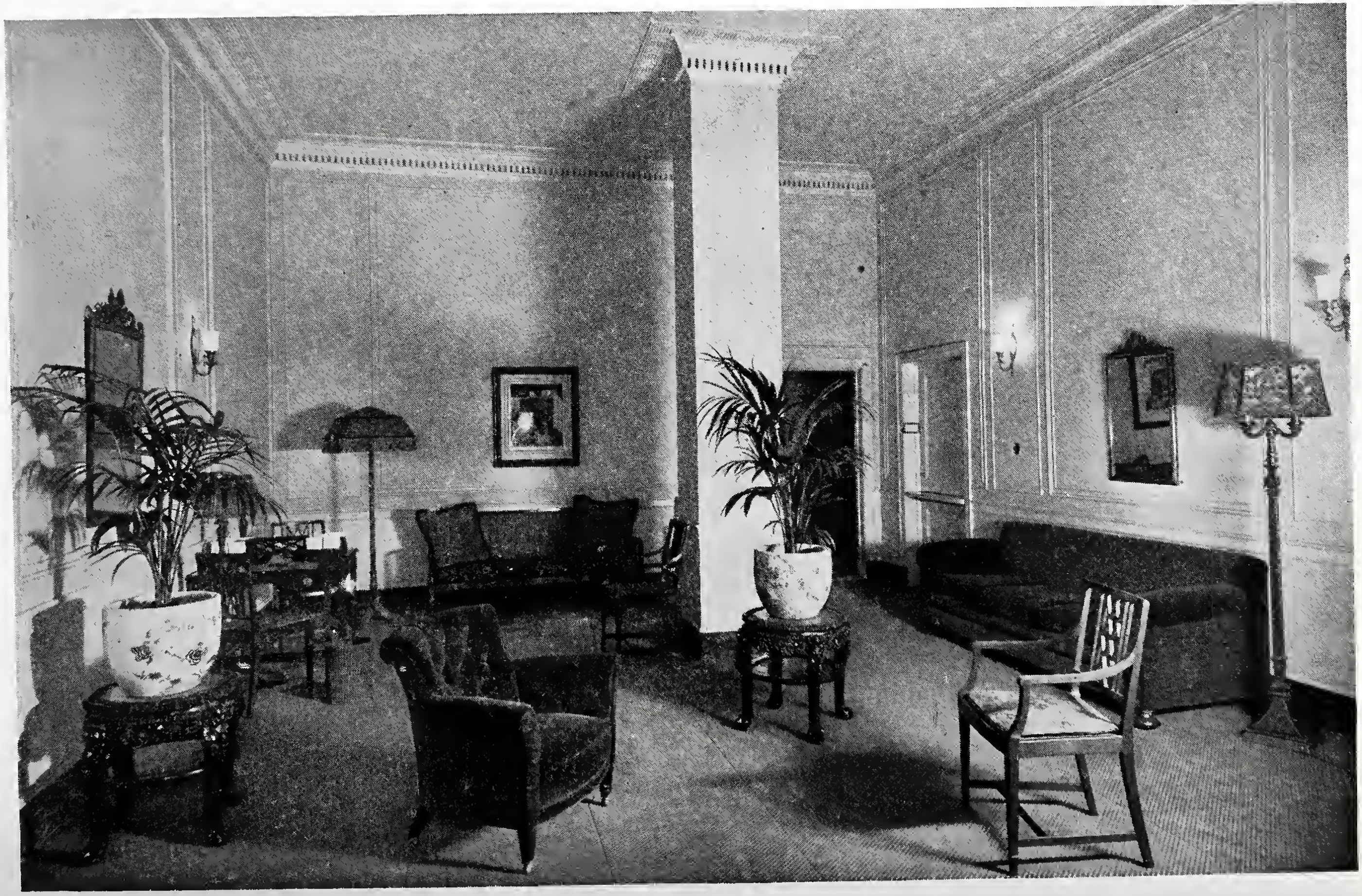
BALCONY FLOOR PLAN—STILLMAN THEATRE, CLEVELAND, OHIO.
GEO. B. POST & SONS, ARCHITECTS.


LONGITUDINAL · SECTION · LOOKING · WEST
STILLMAN THEATRE AND ADDITION TO HOTEL STATLER
667-Y 17
GEO. B. POST & SONS

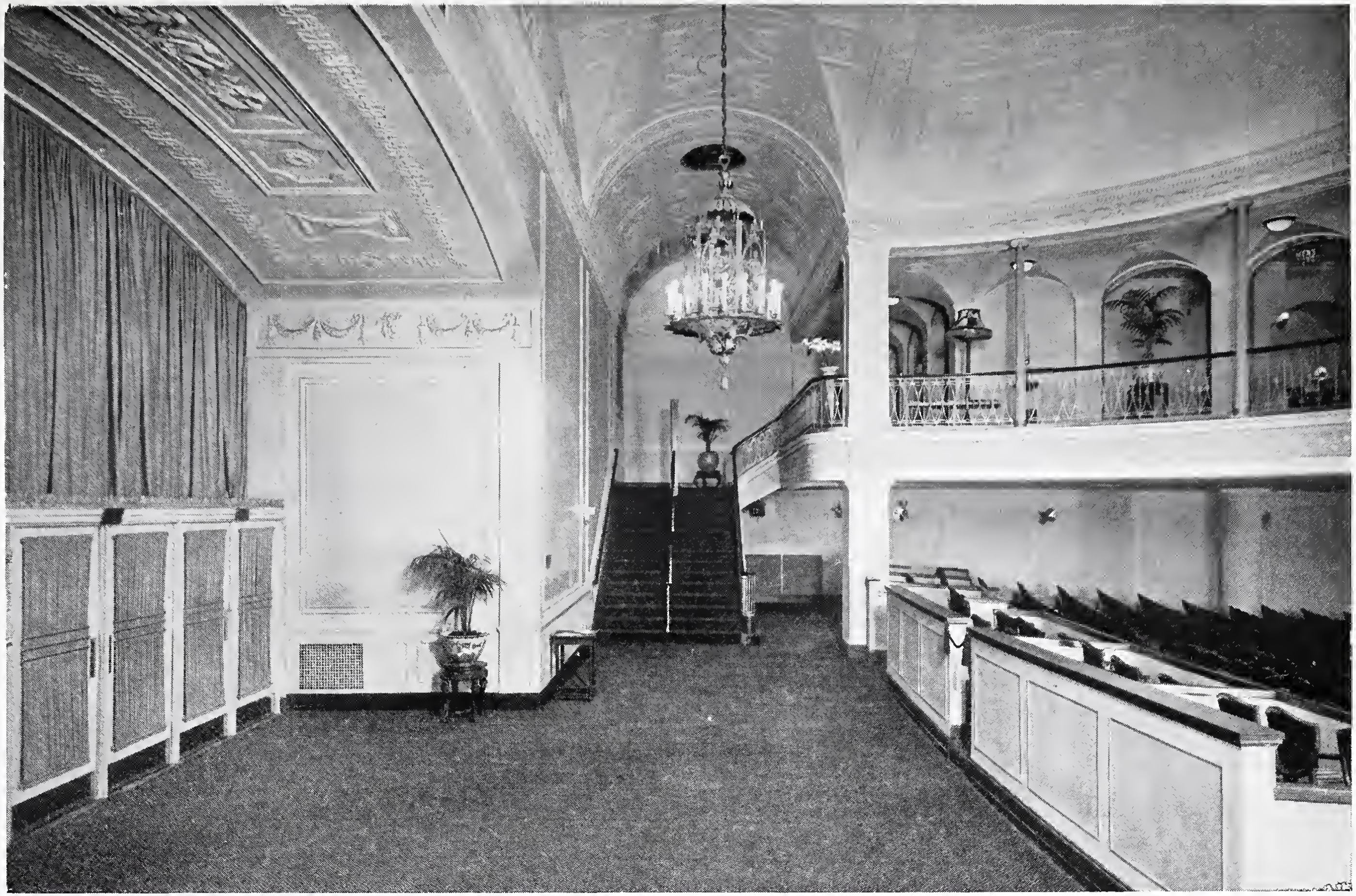
LONGITUDINAL SECTION, LOOKING WEST—
STILLMAN THEATRE, CLEVELAND, OHIO.
GEO. B. POST & SONS, ARCHITECTS.



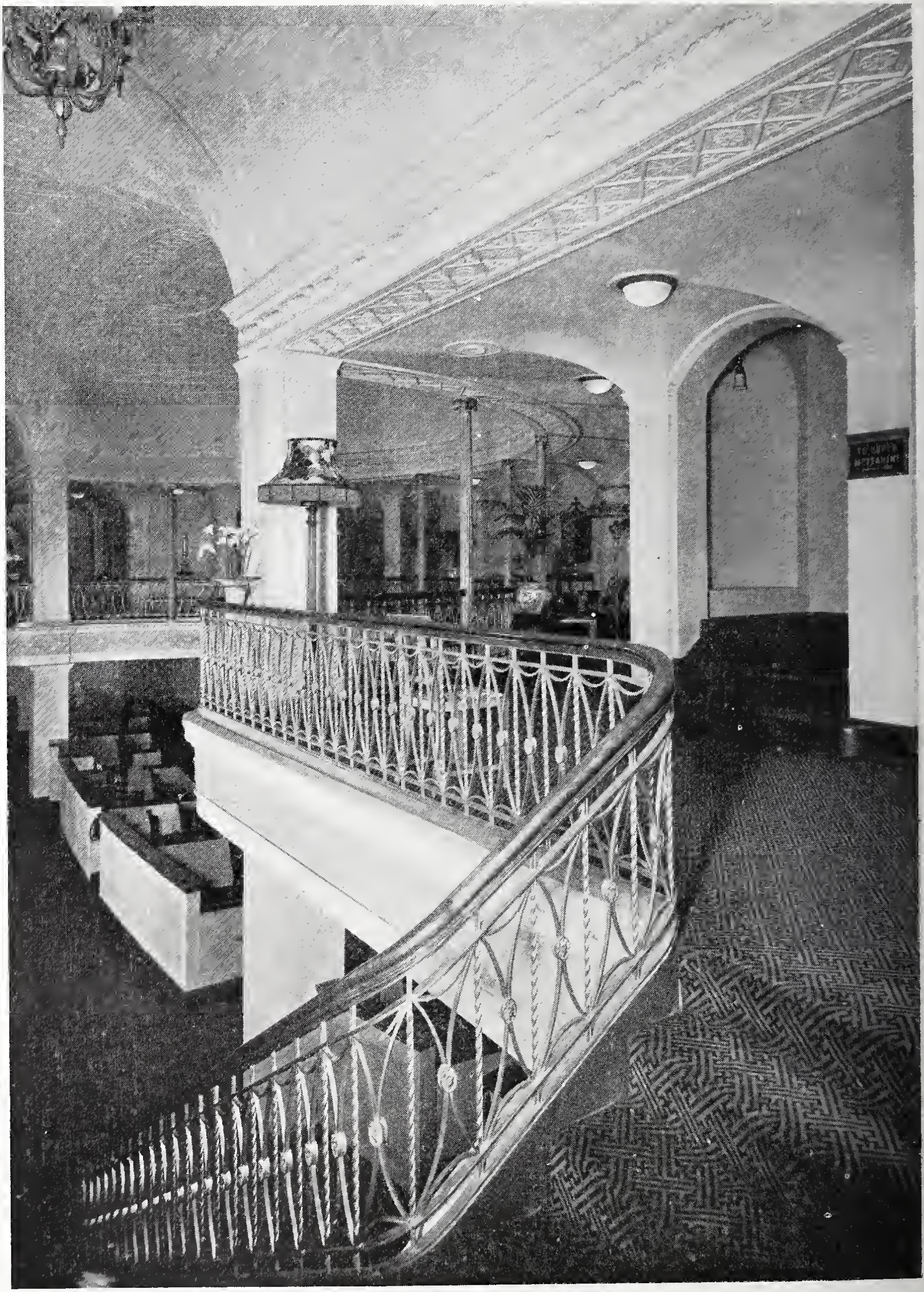
ENTRANCE FOYER, SHOWING ENTRANCE TO RECEPTION ROOM—STILLMAN THEATRE, CLEVELAND, OHIO. GEO. B. POST & SONS, ARCHITECTS.



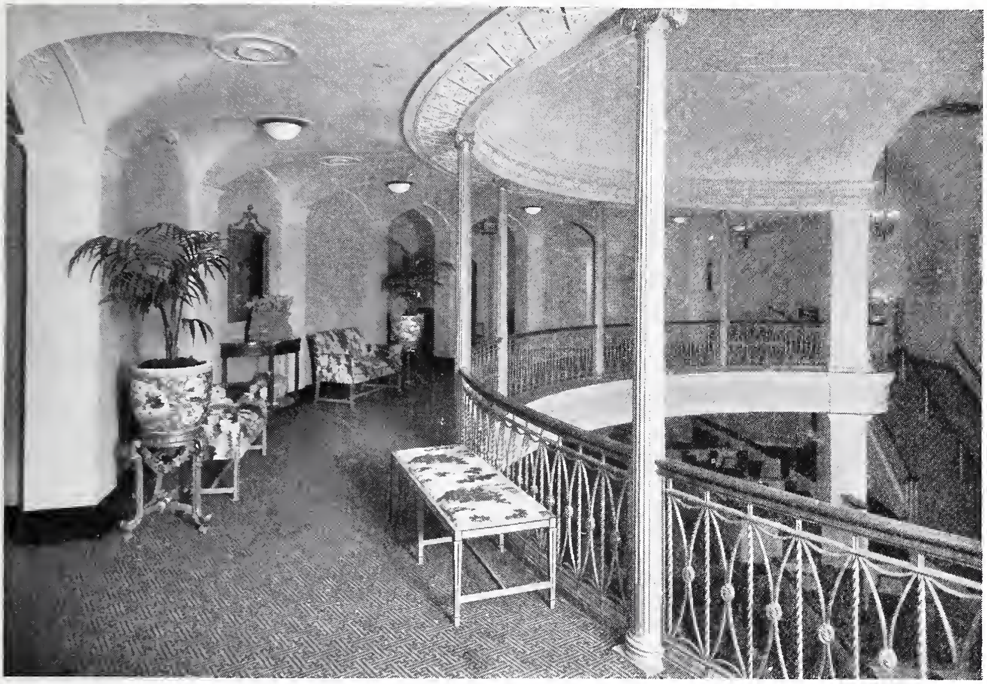
RECEPTION ROOM—STILLMAN THEATRE, CLEVELAND, OHIO. GEO. B. POST & SONS, ARCHITECTS.



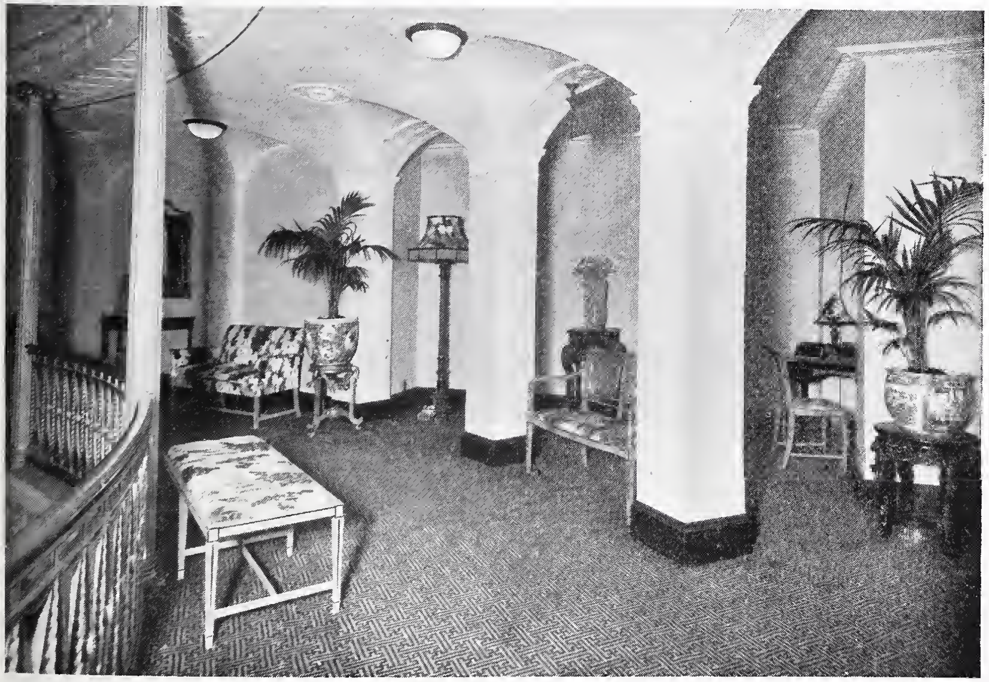
REAR OF AUDITORIUM, SHOWING MAIN STAIRWAY TO MEZZANINE PROMENADE AND BALCONY—STILLMAN THEATRE, CLEVELAND, OHIO. GEO. B. POST & SONS, ARCHITECTS.



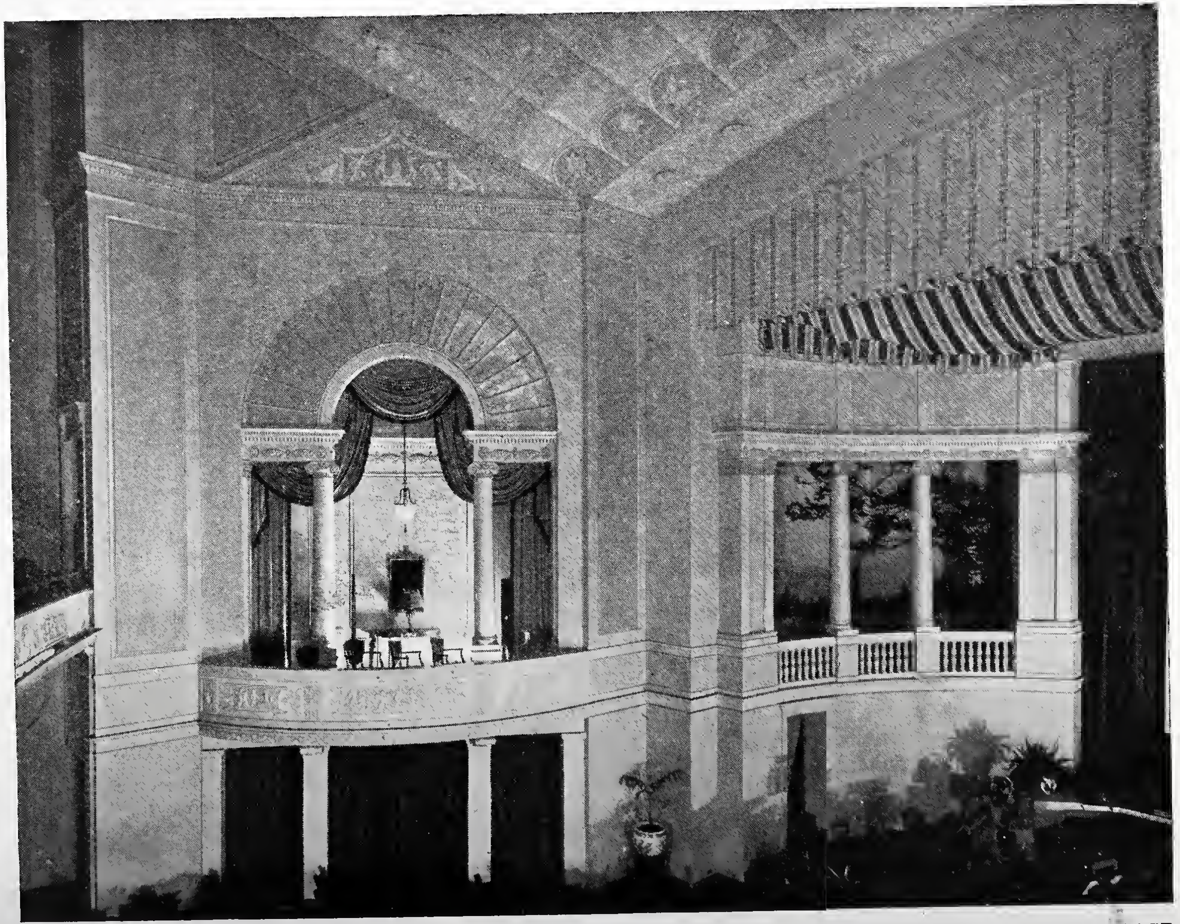
MEZZANINE PROMENADE—STILLMAN THEATRE, CLEVELAND, OHIO. GEO. B. POST & SONS, ARCHITECTS.



MEZZANINE PROMENADE—STILLMAN THEATRE, CLEVELAND, OHIO.
Geo. B. Post & Sons, Architects.



MEZZANINE PROMENADE—STILLMAN THEATRE, CLEVELAND, OHIO.
Geo. B. Post & Sons, Architects.



VIEW OF PROSCENIUM BOX AND STAGE SETTING—STILLMAN THEATRE, CLEVELAND, OHIO. GEO. B. POST & SONS, ARCHITECTS.

stepping lines of the balcony pass through the projected plane of the curtain several feet below the footlights and range from wall to wall of the proscenium arch.

But in the setting for the picture screen you will find no suggestion of the made-over dramatic stage. The distinctive character of the motion picture theatre is well illustrated in the suppression of the necessary proscenium arch, and the invasion of the precinct of the stage by a setting which is a homogeneous part of the general architectural scheme. The picture screen can be raised aloft and entirely concealed from view. The small stage then available, with its floor level above that of the heads of the musicians, is admirably adapted to the presentation of small concerts and recitals.

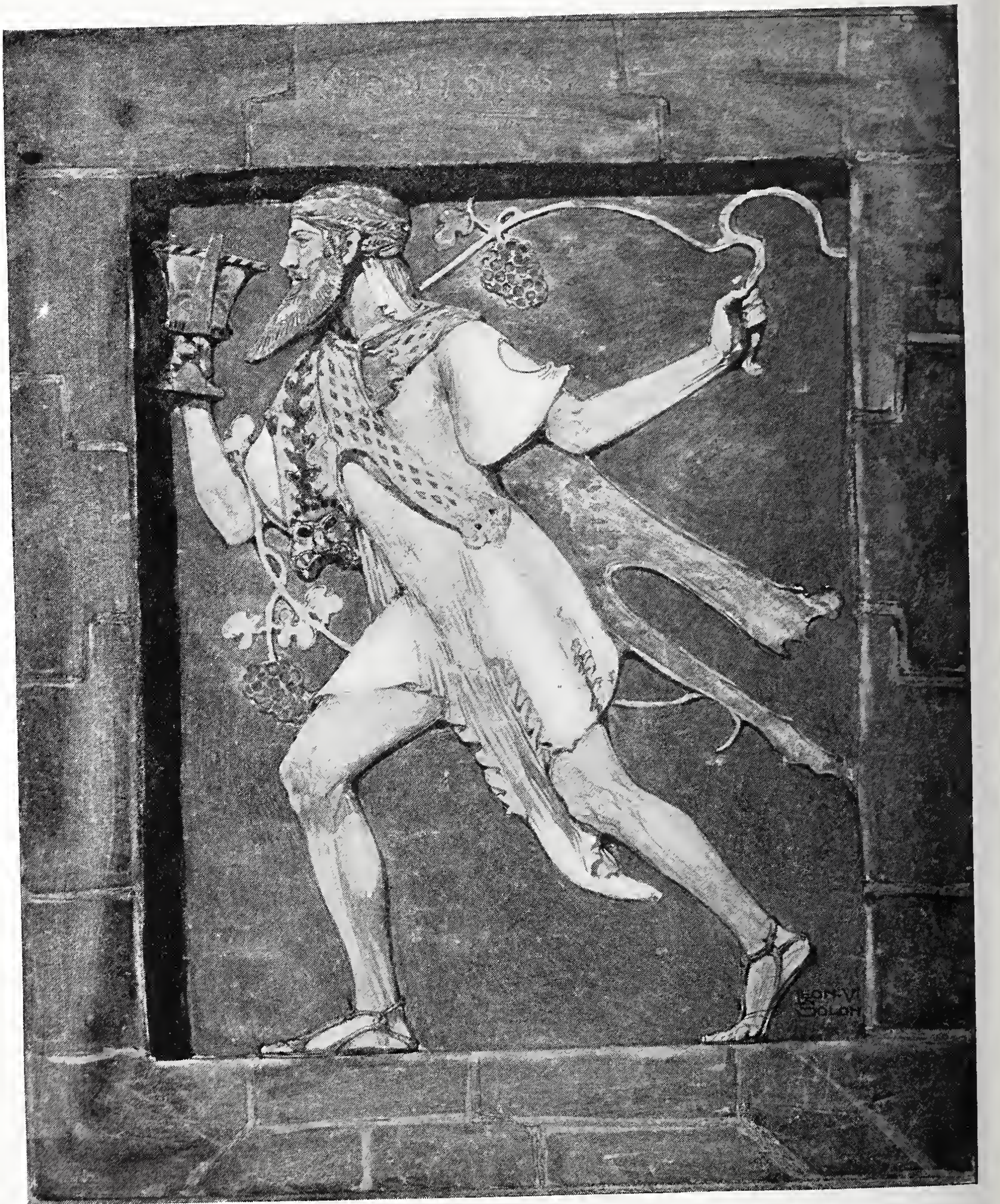
When the picture screen is thus raised, the stage setting is found to continue along the back of the stage, and is then strongly reminiscent of the pictured Roman stage, with its open colonnades framing vistas of open country, with its wide flung awning, screening both players and audience from the sun, and with its coffered and richly colored sounding board high above the heads of the players.

The interest of the stage setting is supported on the sides by the modified Palladian motives which form the proscenium boxes, and is focalized further by the form and composition of the flaring, delicately-ribbed vaulting which springs from wall to wall above the proscenium arch. This vaulting is ornamented with a frieze of figures in the Wedgewood manner in rhythmic attitudes of the classic dance.

The style throughout recalls that of the Theatre Royal in Drury Lane, London, which was altered and redecorated by the brothers Adam in 1775. The walls are colored in tones of warm grays and gray-greens, relieved here and there by the luminous porcelain gray of the Wedgewood figures. The ceiling is a deep, mellow old ivory, glazed and rubbed and waxed until it has attained somewhat of the creamy richness of old sculptured marble; quiet tones that, in the darkened house, hold a promise of relaxation for eye and mind when the lights go on.

The auditorium is reached by a foyer one hundred and fifty feet in length, the floor of which rises in a gradual incline from the entrance on Euclid avenue to the doors of the auditorium. In order to reduce the apparent length and inclination of this foyer, the recurring motives of the side walls are proportionately reduced in a form of architectural perspective, an expedient similar to that employed in the Scala Regia of the Vatican.

From this foyer open the general offices of the management, and also the reception room, a room with quiet toned paneled and painted walls, reflecting in its decoration and furnishing the character of the mezzanine promenade.



DIONYSOS. A STUDY IN POLYCHROME FAIENCE BY LEON V. SOLON.

THE GREEK SYSTEM OF ARCHITECTVRAL POLYCHROME DECORATION

TEXT AND DRAWINGS BY LEON V. SOLON

THE art of painting and polychrome decoration as practiced by the Greeks is difficult to visualize, owing to the disparity between existing remains and the narratives of classic authors. Pliny, the practical and exhaustive historian, records much that is intimate concerning men and methods, but is guilty of omissions which greatly depreciate his value to scholars and technicians. He tells us, for instance, that the palette of the great painters preceding the time of Alexander, which includes Zeuxis and Apelles, consisted solely of red, black, yellow and white. The modern painter who, with this meagre palette in mind, attempts to review mentally the combination by which these tints can be so adjusted that grapes may be painted with realism sufficient to attract birds is compelled to credit the feathered tribes of Greece with an acute decorative sense. In his list Pliny has omitted to include blue, a color found on almost every building as far back as the Mycenean Age.

In matters controlling art activity the Greeks appear to have assumed that the necessity to stabilize invention augmented with the importance of the undertaking; esthetic laws should be gradually evolved by works of progressive excellence. The fixed points from which progress was to evolve were established with a marvelous appreciation of the essential in beauty.

The right to originate was held as the reward for proficiency, a privilege protected by a statute enforced, thereby guarding public taste from gratifying its inborn predilection for the inferior creation.

With all their activities in the pursuit of beauty, we find the evidence of practical regulation to control effort operating as a restraint to exuberant temperament or as a guide for the average man.

In a race preeminent in philosophy and in the analysis of abstractions, we might assume that color would have enjoyed the free rein accorded poetry or music. This, however, was not the case, and extremely rigid rules controlled its application when embellishing architecture, which appear to have been passively accepted and implicitly obeyed.

Traces of color survive on practically all buildings where the surface of the material has been protected from disintegration, both on the great monuments and the dwellings. Examples occur over so wide an area and from so remote a date that we may regard the practice more as an instinct than as a mode. Analysis of the data proves that the Greeks formulated a code whereby they neutralized the danger of misusing color, and insured its effectiveness by limiting its application to specific features, even restricting the choice of tints in certain locations.

The practice of architecture on classic lines is much indebted to the patient research of the archeologist for the reconstruction of material from which inspiration is derived. Of recent years the science of archeology has undergone a drastic revision of methods, purposes and aims; the human element has entered more prominently into its scope, through its affiliation with anthropological research; appreciation of its contributions and prospective attainments by workers in the arts creates an outside interest which is a stimulant, removing it from that isolation in which it was formerly left.

We will now briefly summarize the

available facts bearing on the subject of Greek architectural polychrome which have been accumulated by archeologists.

EXCAVATIONS OF RUINS.

The earliest excavations for objects of antique art were made during the Renaissance era, with a view to supplying the galleries of princely collectors with sculpture and other rare and beautiful objects of classic times; and the high prices paid for fine examples often rendered the pursuit extremely profitable. From the close of that period to the middle of the nineteenth century desultory efforts were made by private individuals, and a considerable quantity of literature was compiled in which classic art was commented upon from almost every angle. Though traces of color must have been evident on a great number of the examples retrieved, that feature does not appear to have excited any interest and was only casually noted in rare instances.

The first important excavation responsible for advancing the question of polychrome architecture was made by the famous French architect and archeologist Hittorff at Selinous. Color decoration was so pronounced a feature that Hittorff devised elaborate reconstructions of the buildings and decorations from the fragments exhumed. Unfortunately, his enthusiasm led him to supplement what appeared to be missing data with detail from contemporary Greek vases, in a manner that suggests the Beaux Arts more than Hellas, and which has since been proved inaccurate. He put forth the opinion that it was a custom to decorate buildings in polychrome, which started one of those acrimonious disputes that in the past so frequently galvanized the archeological world.

In 1876 the great temples of Zeus at Olympia, together with their treasuries, were discovered, furnishing definite clues from which the Greek system of architectural polychrome was gradually reconstructed and the correct location of certain doubtful items definitely settled. One of these, the polychrome faience revetments, which Hittorff has attributed to the ceiling, were found to belong to the cornice and corona.

COLOR APPLICATION.

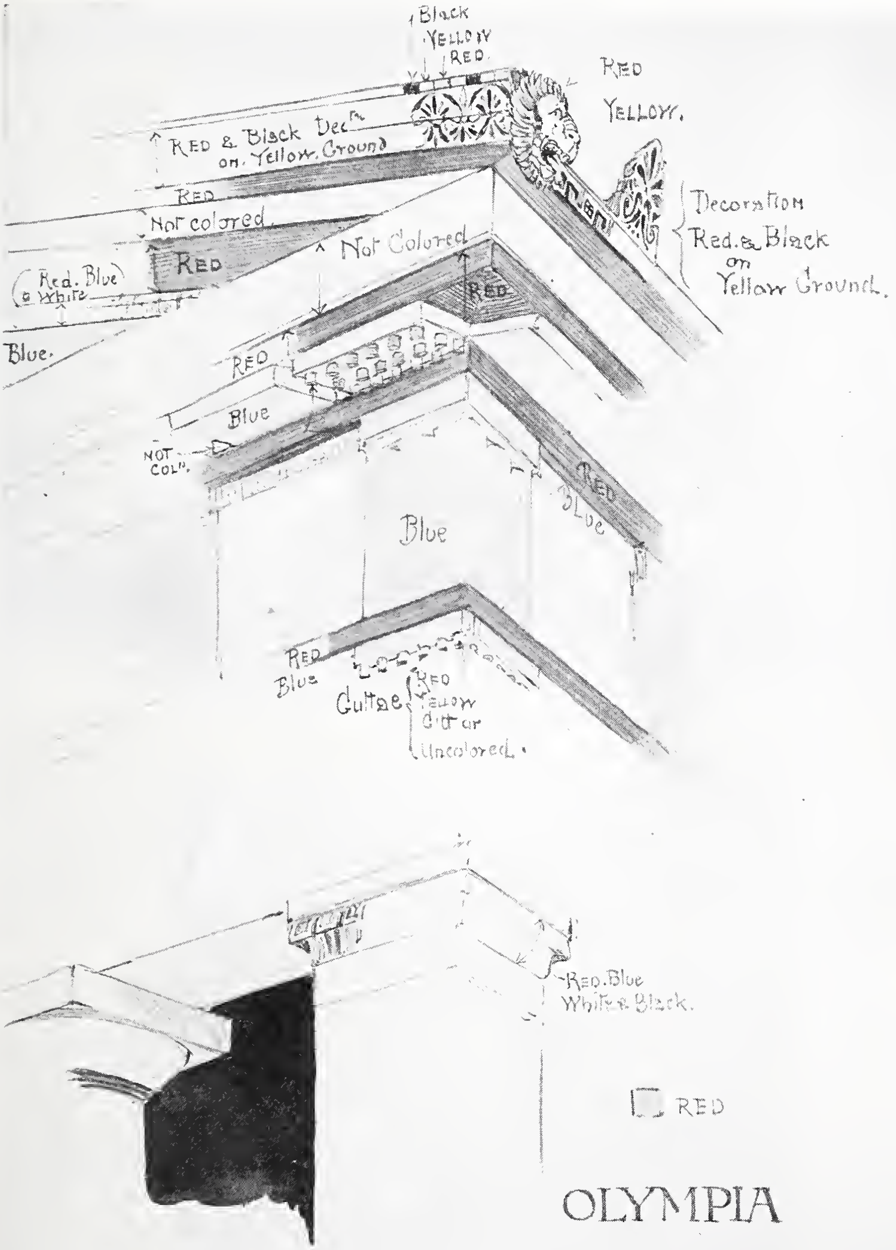
The processes of color application were three in number:

(1) By the fresco method of painting on wet stucco. The Greeks made a very tenacious stucco with which they faced the stone in those districts where the stone was of an inferior grade. It was fine in texture, and detail of great delicacy was painted on it. Where the color mass was free from decoration the stain was mixed with the stucco itself.

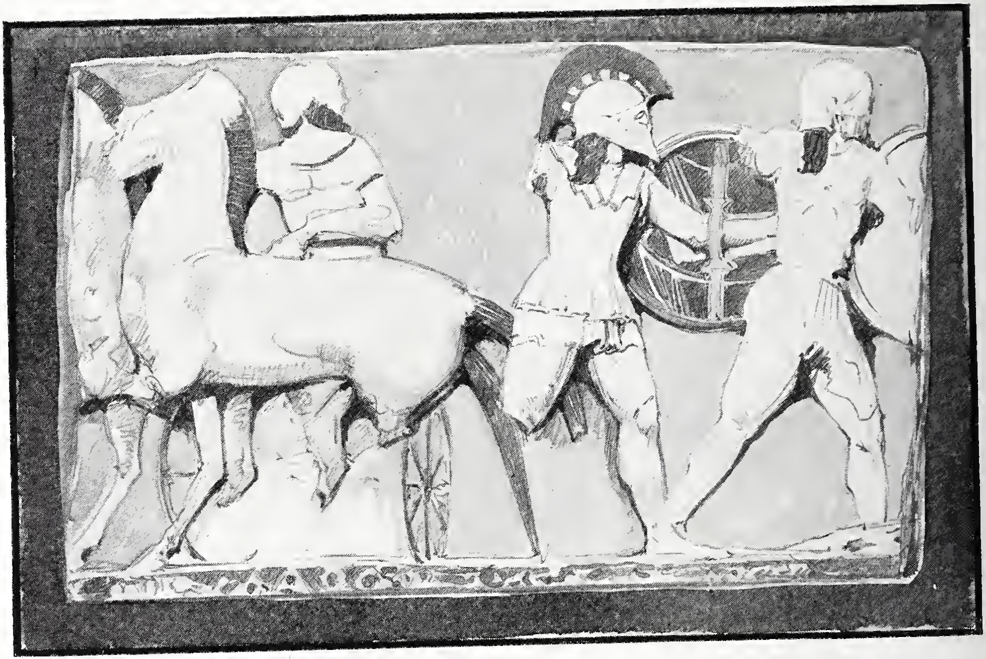
(2) By the encaustic process, which was employed for painting on marble. The pigment was mixed with melted wax, which, when liquid, was used for painting; when it had set, hot irons were applied to the painted surface, which caused the colored wax to penetrate the marble.

(3) By the execution of certain structural items in polychrome faience, such as the highly decorated cornice and corona moldings, antefixae, gargoyles and ornamental roof tiles.

The manner in which the use of faience for revetments and moldings was established is characteristic of the inductive methods of the modern archeologist. During the Byzantine period a wall had been built around the site of the temples and treasuries, which, on examination, proved to have been constructed with material gathered from the ruins. The wall was carefully taken down and found to consist largely of moldings, many of which were highly finished, while others were merely rough-hewn. It was obvious that the latter formed part of the exterior of the structure, but the roughness of the surface precluded their use on the face of the wall. In other temples, stone so treated had invariably been finished with stucco; but as no vestige of that material was discernible, another solution had to be sought. These roughly finished moldings were pierced with holes, in some of which bronze nails remained, obviously for securing objects to their face. The most likely material was the fired clay slabs, debris of which were found in considerable quantities in the vicinity. It was possible to arrive at the original form of the pieces, which proved to be three-sided sheaths exactly



BORRMANN'S RESTORATION OF THE TEMPLE OF ZEUS AT OLYMPIA, SHOWING THE LOCATION OF THE POLYCHROME ORNAMENTATION AND FLAT COLOR. A TYPICAL EXAMPLE OF THE GREEK POLYCHROME SYSTEM.



FRIEZE OF THE TREASURY OF CNIDUS AT DELPHI, REPRESENTING THE COMBAT OF THE GREEKS AND TROJANS. LIGHT BLUE BACKGROUND; RED DETAIL ON SHIELD, HAIR AND HELMET; RED FIELD FOR INSCRIPTION ON BASE; CHARIOT WHEELS YELLOW.

fitting the moldings in question, having, in addition, holes pierced at intervals corresponding to those in the stone.

This discovery led to the comparison of fragments collected in previous excavations and their identification as important decorative features on the exterior of the buildings.

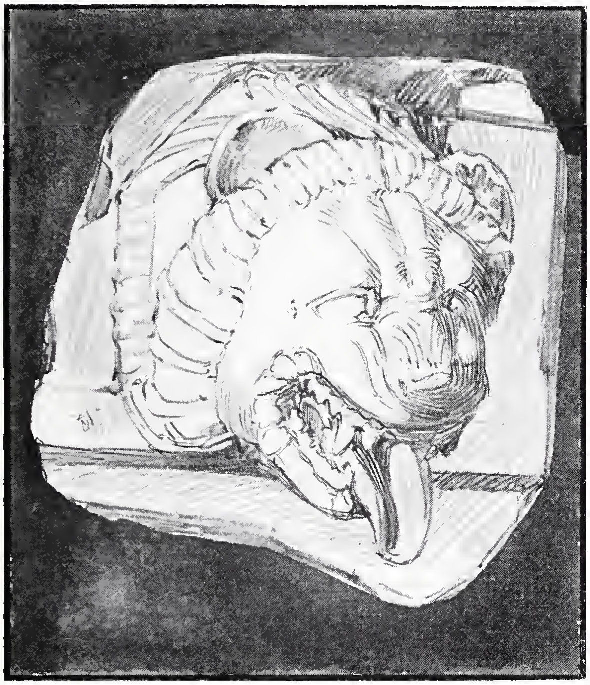
THE GREEK PALETTE.

The colors used by the painters on stucco and in encaustic were: Red, in several shades; brown, black, yellow, white, and light and dark blue; green is sometimes found, but is probably a blue which has decomposed. These colors did not represent the total color equipment of the various crafts, as the textile workers derived many other beautiful colors from madders; they represented those on which they could rely for permanence on exposure to strong light, and were all derived from mineral bases. The colors used by the ceramists were as follows: Reds, produced from oxide of iron; black from the same source, except when made with burnt bones, when it was called "animal black"; the yellow was obtained from ochre; the blues from oxide and silicate of copper (Vitruvius names an "Alexander blue," the ingredients and process of which he describes); the white was made of white clay. The glaze with which these colors were developed has up to the present defied analysis.

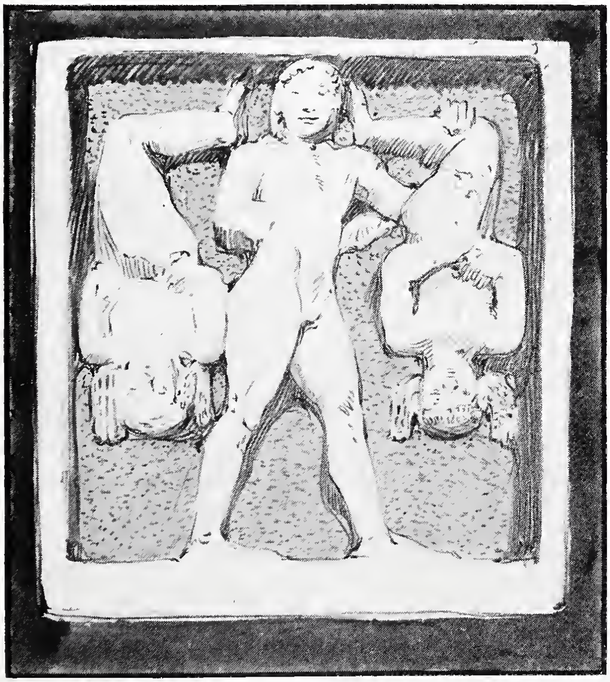
THE LOCATION OF COLORS ON THE EXTERIOR.

Borrmann, one of the architects assisting in the excavations at Olympia, made extensive researches comparing the location of certain colors on certain items of these buildings with corresponding fragments found in other parts of Greater Greece and Sicily. With an occasional exception in the treatment of detail of secondary importance, the following system appears to have been universally followed:

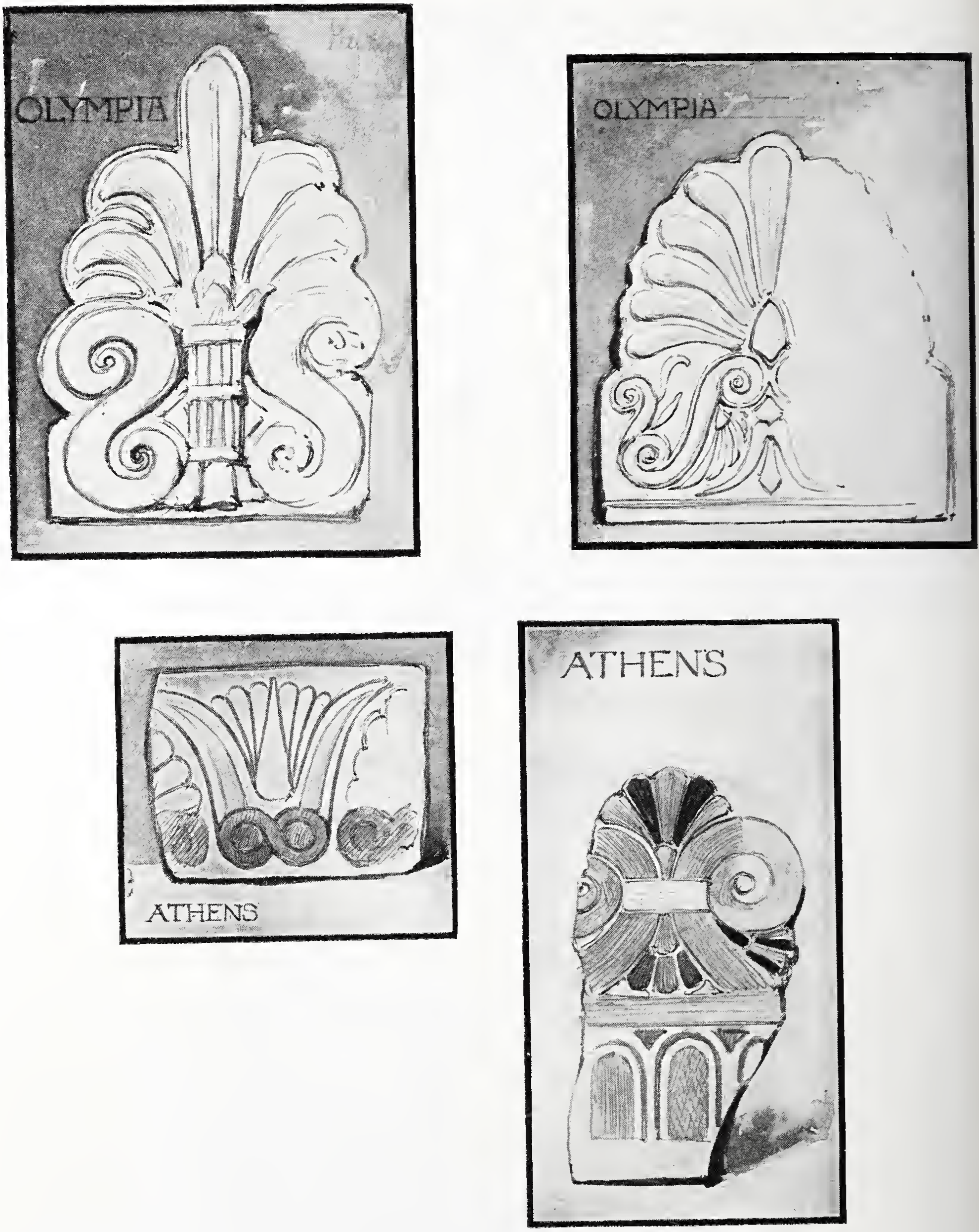
The exterior walls and shafts of columns were never decorated or colored, the surface of the material being left untouched; so far no exceptions to this rule have been brought to light. The capitals at Olympia show no trace of



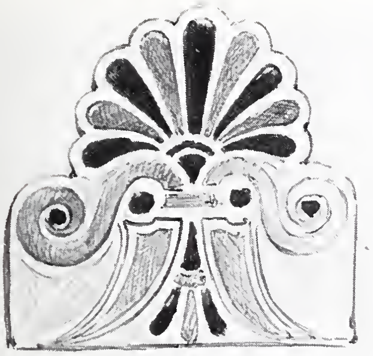
LION'S HEAD, SHOWING SPECIAL TREATMENT OF DETAIL FOR THE APPLICATION OF COLOR.

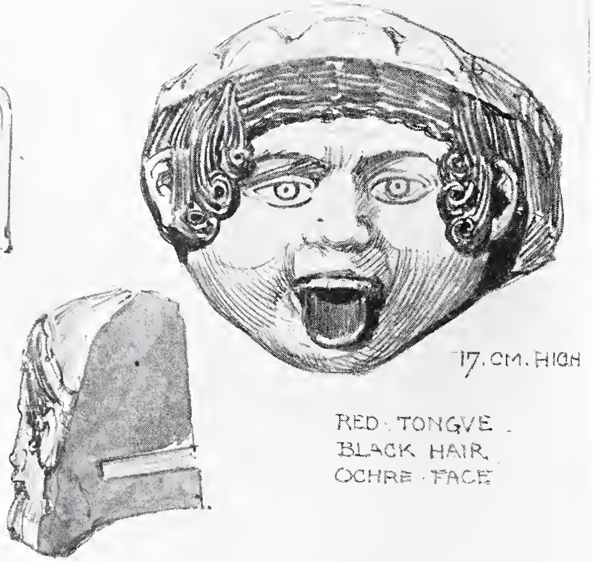


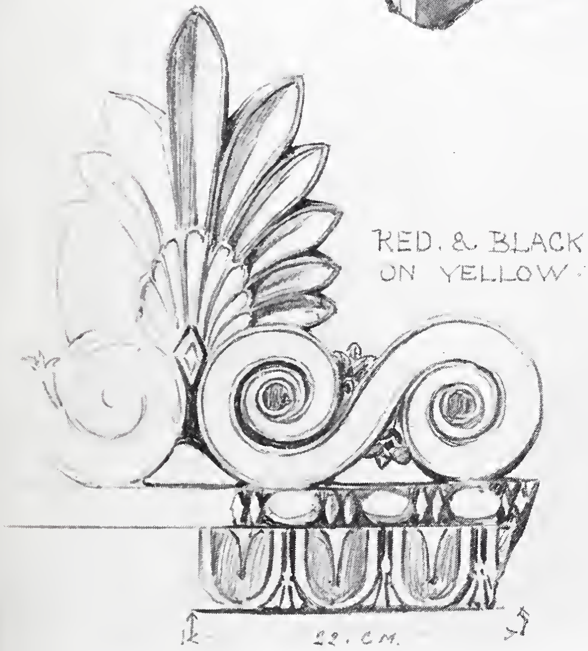
METOPE FROM SELINOUS. FIELD COLORED IN LIGHT BLUE.



SPECIAL TREATMENT OF DETAIL FOR COLOR APPLICATION.

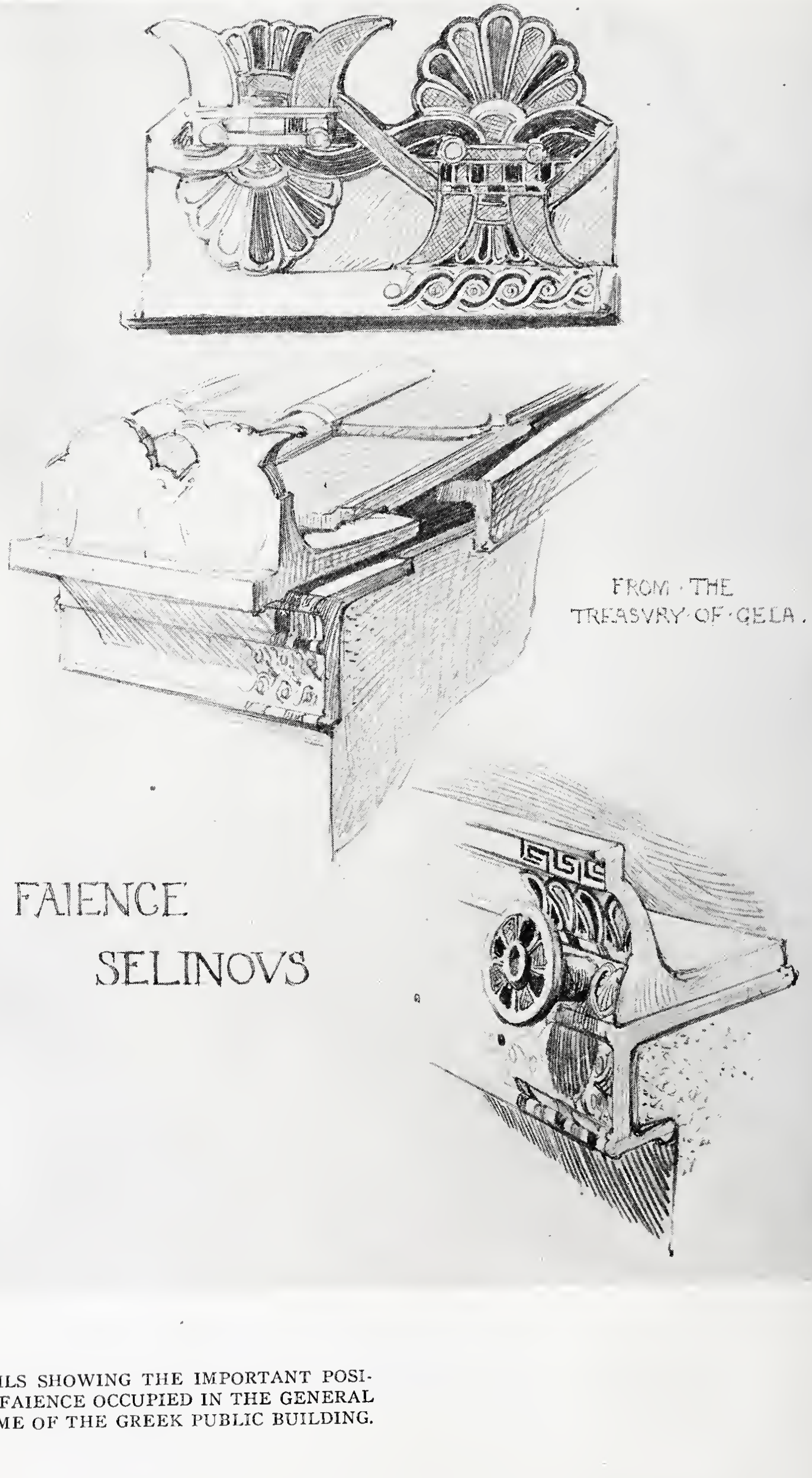




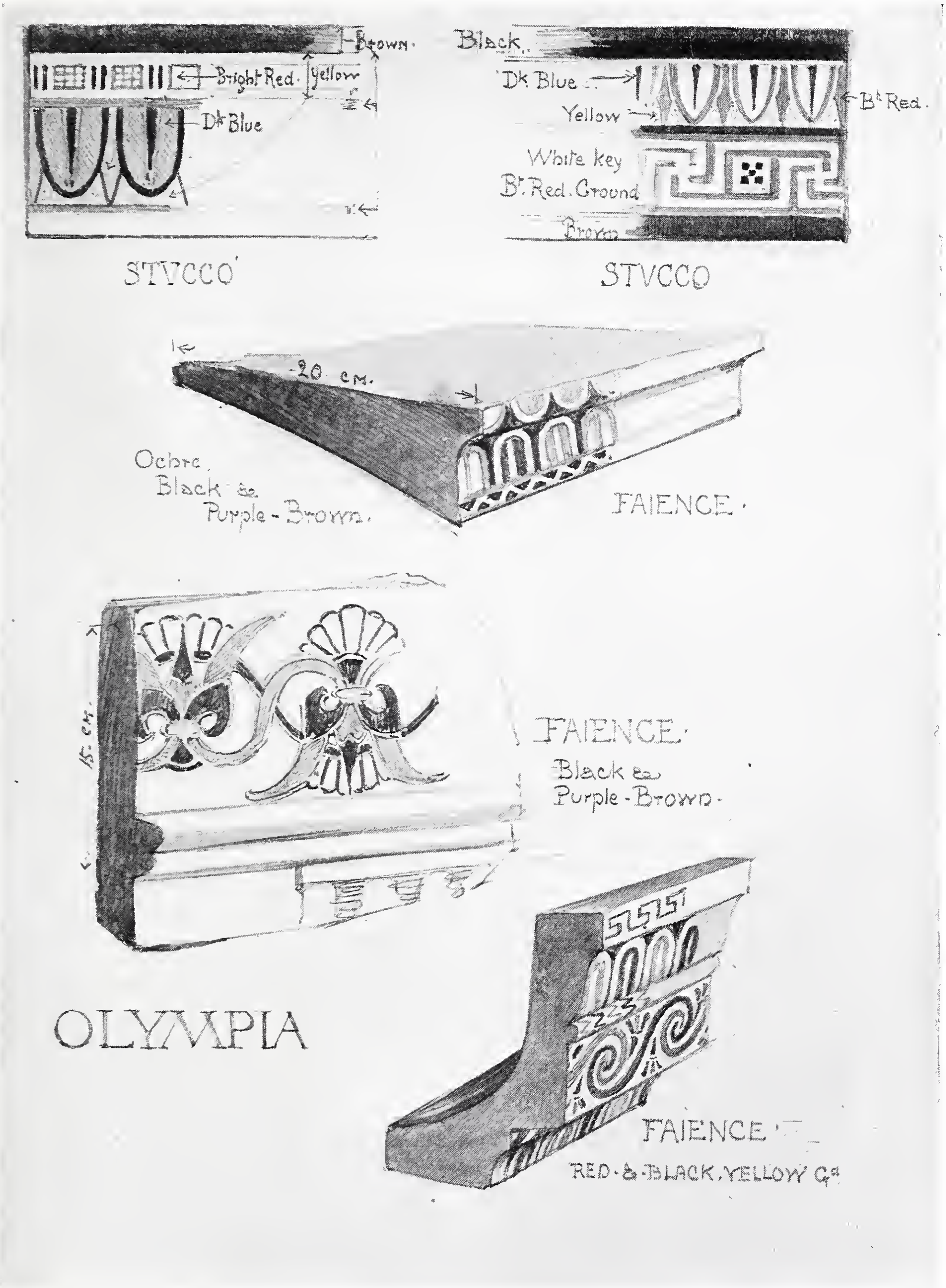


OLYMPIA

DETAILS FROM OLYMPIA. THE PIERCED CORNICE ORNAMENTATION SHOWS A SPECIAL TREATMENT OF MODELING TO PROTECT THE COLOR FROM DEPRECIATION THROUGH LIGHT ENCROACHMENT.



DETAILS SHOWING THE IMPORTANT POSITION FAIENCE OCCUPIED IN THE GENERAL SCHEME OF THE GREEK PUBLIC BUILDING.



GREEK METHOD OF USING POLYCHROME ON STUCCO AND FAIENCE.

color, but apparently no rule governed treatment in this case, as those found at Aegina are decorated in polychrome. The fillets below the echinas were usually colored in red. The capitals of the antae were decorated at Olympia with leaves in polychrome; this item is treated in other temples with a great variety of polychrome methods and designs. Certain colors are invariably found decorating certain parts of the building, for which reason we will classify such parts under the color used.

Blue was the orthodox color for the mutules, triglyphs, and the fillet to which the guttae were attached; the blue used was of a darkish hue. When sculpture was introduced in the metopes, pediment, or frieze, the field was colored; light blue was one of the colors used.

Red was chosen for the lintel of the architrave, the inclined lower face of the corona between the mutules, and the band on which the mutules rest. Occasionally it was used on the guttae. Light red was applied as the alternate to light blue as a background for sculpture. Certain parts of the sculptured relief were traced, ornamented, or filled in with color; where the background was blue, red was used, or the reverse; gold, or its substitute, yellow, was also introduced in addition, in small quantities.

White, black and yellow were accessory tints, considerably used in polychrome design, but had no fixed location on any particular item in the established system of color regulation.

POLYCHROME FAIENCE.

This material is found on the sites of the earliest Greek temples and is contemporary with the later wooden structures. The potter's art of firing clay was introduced into Greece by the Dorians during their invasion in the seventh century B. C.; very shortly after it appears to have been adopted by the builders as a revetment for the cornice, and for metopes, in which case the decorated slabs were framed in wood. It is found extensively in Greater Greece and Sicily, but is rarely used in Peleponesus.

In the cornice, antefixae, gargoyles, and massive pierced cornice moldings, the pieces were fashioned with great elaboration and accuracy, convenience of making and risk in firing being secondary to esthetic and structural considerations.

Throughout the evolution of the orders this material retained the same location in the structural scheme as it occupied in the wooden buildings.

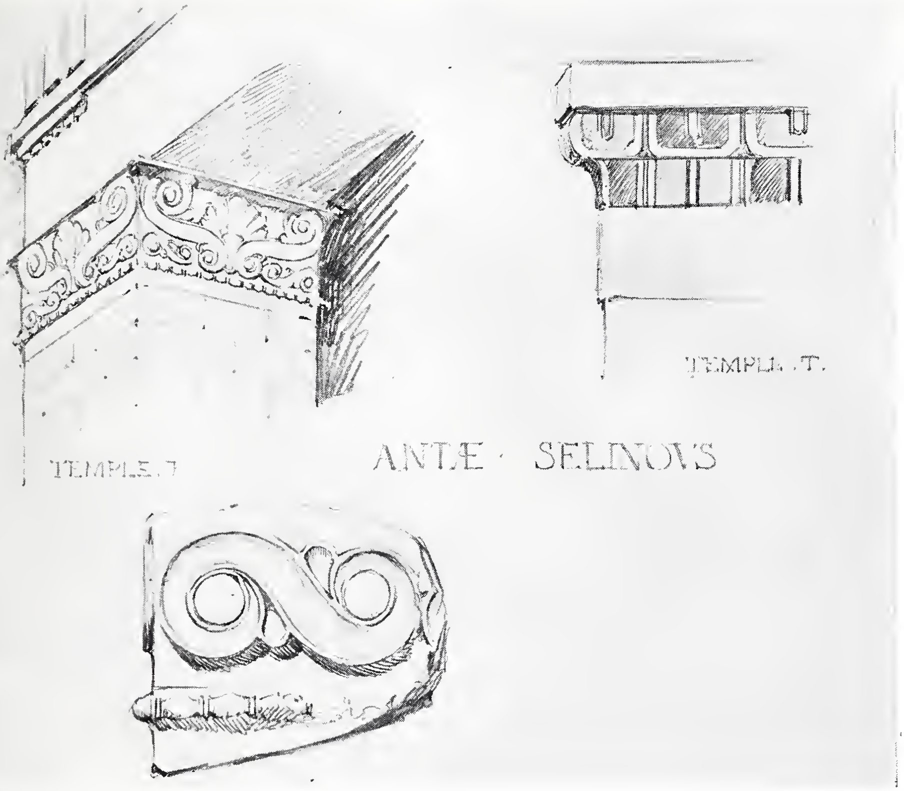
The earliest faience roof tiles are those at Olympia, which dates from the early part of the sixth century B. C.

The faience decoration corresponds in general plan and treatment of detail to that created by the potters for the ornamentation of their wares; in many instances the same decoration adorns the shoulder of a vase and the cornice or corona of a temple. As the building of a temple was a comparatively rare occurrence and the work of the potter a continuous activity, it is reasonable to assume that, in the collaboration of builder and ceramist, the latter submitted his designs and treatments for adaptation to the former's requirements, as the architectural faience work is essentially ceramic in decorative treatment.

PREPARATION OF SURFACE FOR COLOR.

A study of the methods devised by the Greeks to overcome the crudity resulting from the use of the vivid tints on flat and embossed surfaces would probably reward the modern worker in polychrome with valuable suggestion. Tint gradation was not practiced in the Greek polychrome system. Tone variation had consequently to be attained by other methods, and was procured by subtle gradations of plane, causing the play of light to enrich or purify the tint, or by various devices dealing with the boundaries or edges of color masses.

When stucco was chosen to produce long unbroken lines and bands with gently modulated planes, as in the cornice, any surface treatment beneath polychrome ornamentation would have defeated the purpose of its employment. The ornamentation in such instances had a distinctive character, being contrived in such fashion that, by the interweaving and inlaying of tint, no colors were of sufficient area or sufficiently isolated to assert themselves aggressively.



DETAIL SHOWING THE USE OF FAIENCE ON THE ANTAE AT SELINOUS.

Where colored ornament was needed in such scale that flat tints would have appeared hard and detached, surface treatment was resorted to. The following are a few of the methods in most general use:

(1) By a raised outline, in the form of a cloison surrounding the main sections of detail; the detail was occasionally slightly sunk to the centre, as in the antae of the Temple at Selinous. The outline was most frequently uncolored.

(2) The silhouette or plan of the ornament was treated with very slight undetailed embossment, so slight in relief as to be barely distinguishable at a distance without the color.

(3) A combination of these two previous methods is sometimes found in a motif, the cloison being used to impart great solidity to the base or supporting portion of the design, as in some of the Olympia antefixae.

(4) In Athenian work a very precise and sharply cut outline was sunk in the field, which was filled with color and combined with detail in soft relief or intaglio, also colored, the two treatments being separated by a fillet of the field color.

(5) A softly embossed surface was sunk below the face of the material and bounded by sharply cut edges which projected sharp shadows, reminiscent of the technique of Egyptian mural carvings.

Many devices were contrived to preserve color from the encroachment of light, when the object treated was defined against the sky, as in the case of the antefixae or of ornate cornices. A most elaborate solution to this problem was discovered at Olympia, in which the color maintains its strength by the framework of dark shadows cast in deep recesses.

COLOR PLANNING OF ORNAMENTATION.

The basic principle controlling polychrome decoration might be condensed into the following formula: The ornamental elaboration of decorative items in a structure may augment, as their structural importance diminishes. A lengthy and exhaustive examination of polychrome decoration practiced by the various architectural craftsmen points to two factors as being conspicuous in Greek color planning: (1) that repeating detail should be treated with alternating or methodically recurring colors; (2) that actual contact of tints coloring adjoining ornamental detail was to be strictly avoided. Such ornamentation as the leaf or egg-and-dart bands are almost invariably colored with two or three colors, alternating or recurring in regular order where polychrome is used. The colors are without exception separated by the fillet; in many cases the lower color band from which the leaves spring provides the cloison color for a certain leaf color each time that it appears. Alternating colors usually decorate the leaves of the anthemion, each leaf being separated by a fillet, and often having a second outline outside the fillet.

The various uses and effects obtained with the colored outline or fillet are too numerous to review here; the illustrations will give a slight idea of the range.

THE GREEK ESTIMATE OF COLOR.

Practitioners of the plastic arts might be divided into two classes: those who read nature in contour, and those who read it in mass. Among the former are sculptors and draftsmen; among the latter, the colorists.

The most happy inspiration of the Greek was found in purity of form, the counterbalancing of poise, and that exquisite modulation by which planes merge into contour. Their painters ignored light and shade, atmosphere and color vibration, concerning themselves with none of those qualities which have been the main preoccupation of their confreres from da Vinci's day. Their endeavor was to extract the essence of elegance in form and proportion and reduce it to its simplest expression, in silhouette and outline.

Color, to the early Greek, possessed only a portion of the significance enveloping it today. It was the means by which sensuousness was added to dignity, an illumination in the Gothic sense, with no further significance than enrichment. Color harmony in the modern sense does not figure in Greek art, and will be sought there in vain. Their skill lay in an infallible adjustment of color, in such mutual relation and proportion that a homogeneous effect was produced with discordant elements.

We cannot learn color as we understand it from them, but we can learn how to use it. Color expression is as closely allied to the various races as are their languages, for which reason we cannot apply a Chinese color scheme which fascinates us to some Gothic design we admire, without each suffering by the alliance. It is the faith of every serious worker and observer in this country that a national school of architecture and decoration is in process of evolution, and the belief of many that a distinctive type of polychrome decoration will be a dominant feature of that school. The capacity to harmonize color results from a spontaneous impulse, and cannot therefore be generated artificially; but expression may be facilitated by constructing a technique. We turn to nature for all that is most beautiful in form and color; but color harmony is not to be found there, and can proceed only from the artist's brain.

English Architectural Decoration

Text and Measured Drawings by Albert E. Bullock

PART V.

THE vital hold upon architectural expression which Renaissance principles had obtained by the close of the reign of Charles I, through the masterly influence of Inigo Jones and his immediate followers, guided the evolution of interior decoration in subsequent eras.

The stern days of guerrilla warfare which occurred during the Commonwealth failed to stamp out the essential elements, but tended rather to purify detail and make for plainer finishing.

Furniture was of a more solid character and took the forms of combination which necessity dictated. Thus, a table would serve the double purpose of table and bench and would have mechanical means for its extension in size.

Similarly the chests and coffers were made sufficiently portable to be conveyed long distances, containing the chief utensils and belongings of the household.

The main requirements were for easy storage and seating, but bedding was a secondary consideration and frequent resort was had to straw mattresses.

The character of this furniture was naturally heavy, not to say clumsy, because solid and strong articles were most in request.

During this age, when our Puritan fathers stood out firmly for their religious principles with sword and stave, when the Roundheads and the hard-headed Cromwellians fought in many civil wars for constitutional rights, the simplification of transport of all things essential to daily use became one of the chief domestic problems. They were forced to sacrifice ease and pleasure for the severe days of action and continual movement which the civil combats brought about.

Thus it was that many hid their fortunes from the grasping and inquisitive authorities of State and daily lived in fear of their lives and continual dread of the events of the morrow.

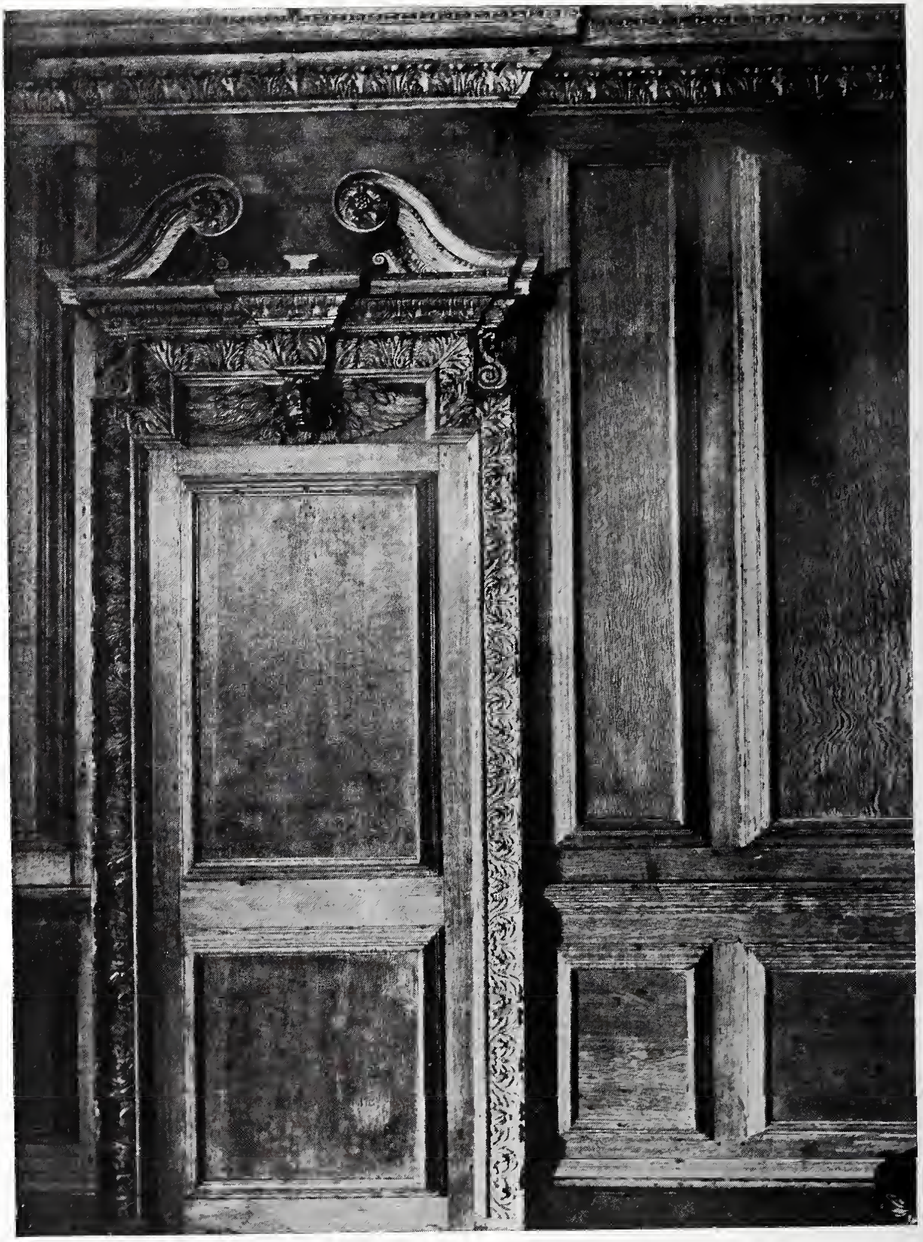
In like manner Inigo Jones was driven to secrete his possessions, which he did in company with his faithful collaborator, Nicholas Stone, a famous and popular sculptor of the time, who assisted Jones to bury his treasures in Hackney Marshes, then a wild stretch of common land on the outskirts east of London City.

The recorded fact has found an echo in modern fiction, it being the theme of at least one author, Rider Haggard, in his story of the life of "Colonel Quaritch."

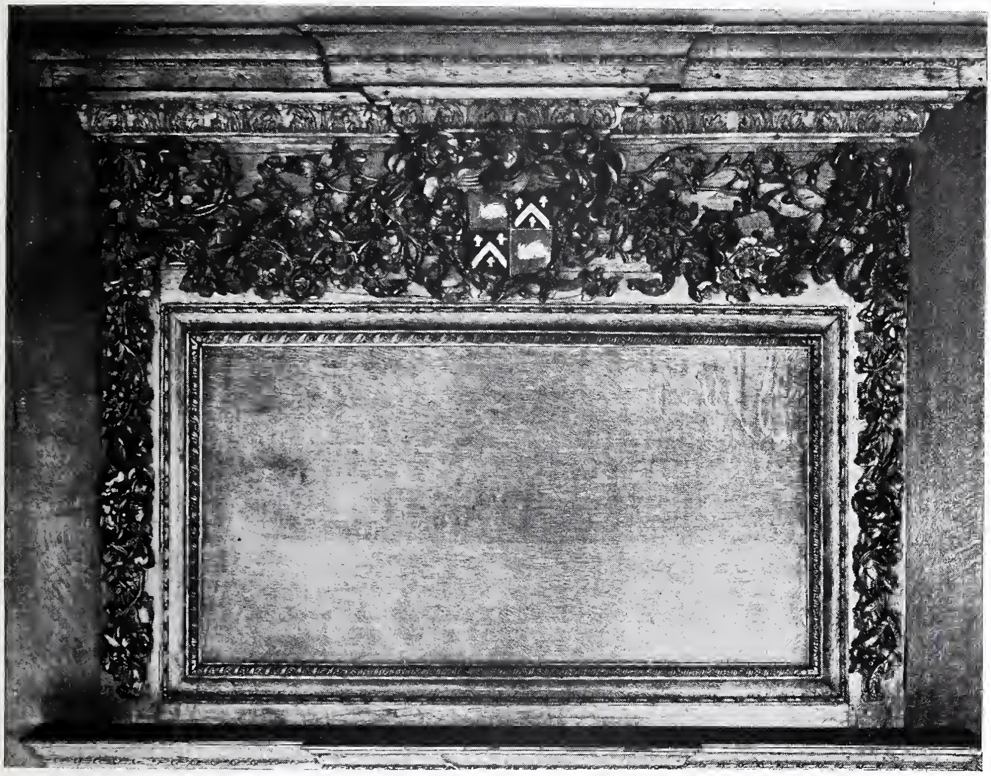
It is natural to assume that during such stirring times it would be useless to search for evidences of artistic decoration or, indeed, any building operations other than those of a temporary nature. Architectural progress gave way to an age of destruction, accompanied by the abuse of holy rites and ceremonies.

The marvel is that more loss to art was not sustained, many beautiful examples of previous work being still preserved in both churches and private residences; and we have it upon the authority of the present owner of Forde Abbey that when Cromwell visited that place he suffered the preservation of much very valuable furniture, including some fine Italian gilt coffers now ornamenting the great salon which subsequently formed part of the additions executed by Inigo Jones.

With a knowledge of these intervening circumstances one can the better trace the progress of Renaissance decoration in England by passing over the period of the Commonwealth and comparing the previous work with that succeeding the Restoration, except that there is little doubt—as may be inferred from the foregoing remarks—that much furniture was executed of a solid, plain and transportable nature.



DOOR AND PANELING — PENHALLOW ROOM, CLIFFORD'S INN, LONDON. (NOW IN VICTORIA AND ALBERT MUSEUM.)

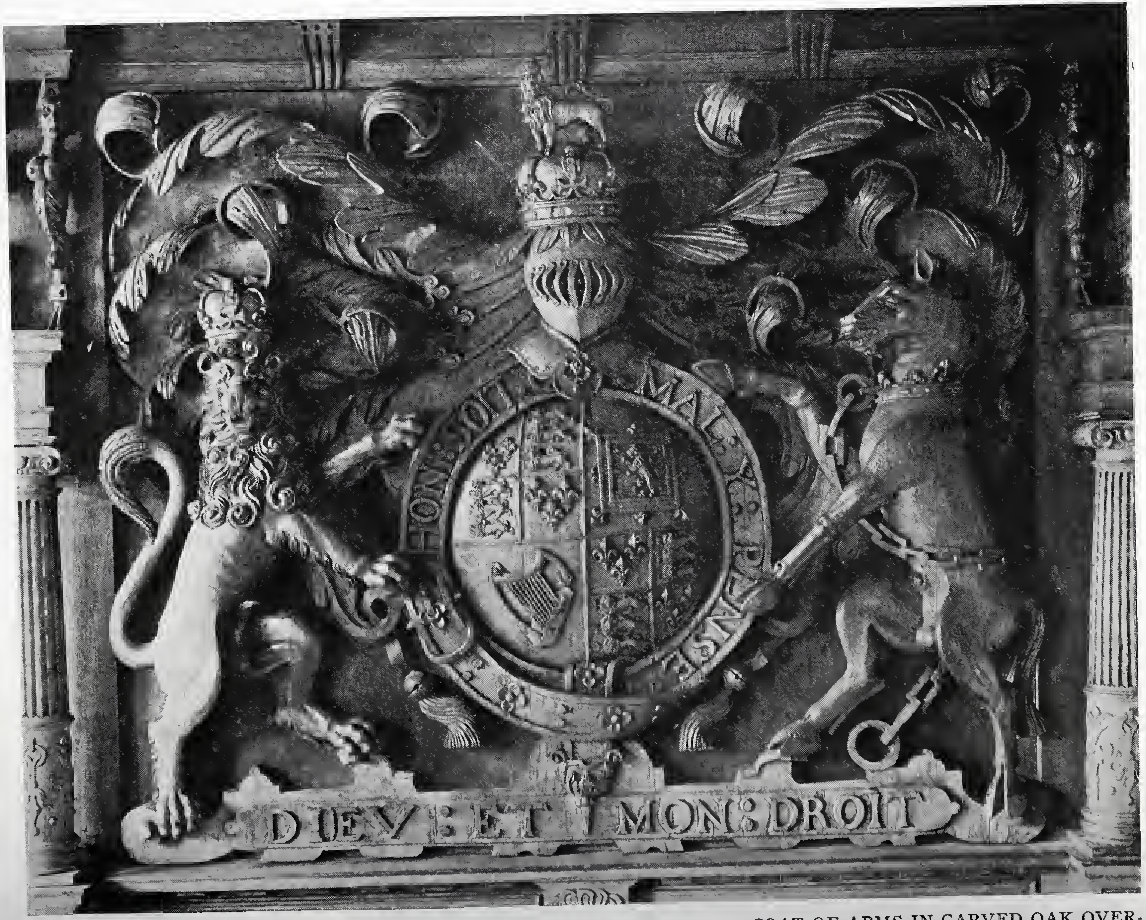


OVERMANTEL FROM CLIFFORD'S INN, LONDON. (IN VICTORIA AND ALBERT MUSEUM.)

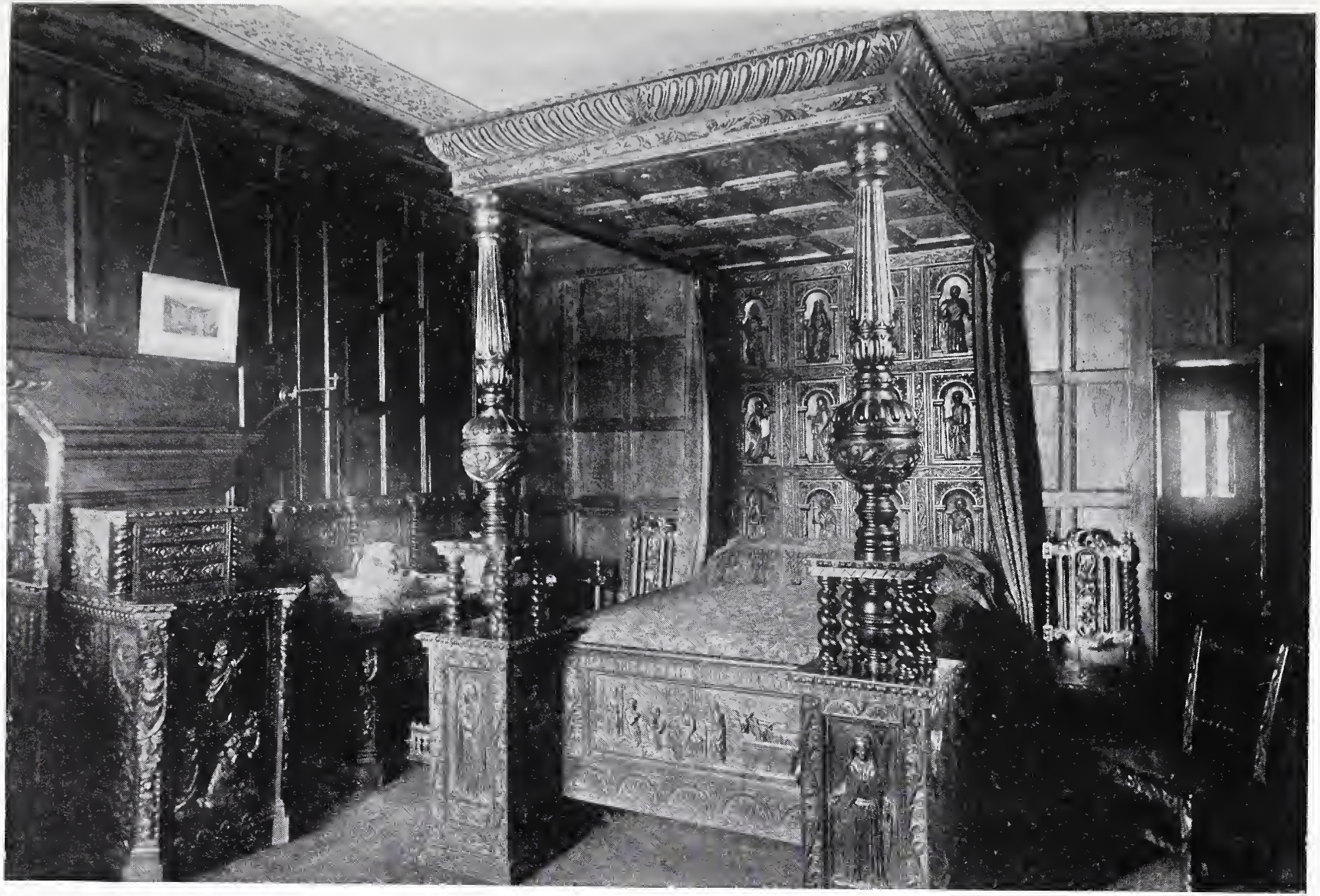
Carving became an increasingly important element of decoration. The large turned balusters gave way to continuous carved and pierced balustrading with closed molded strings to sides of staircases. There is such a staircase at Forde Abbey upon which Simon Gibbons is said to have worked, probably under the direction of Philip Webb, the nephew and pupil of Inigo Jones.

Inigo Jones was born in 1573 and lived seventy-nine years. During his later years he seems to have left much of the activity of the supervision of his practice to Webb, who doubtless completed the work at Forde Abbey and Coleshill. Philip Webb sustained an extensive clientele after the death of his master and was responsible for work at Cobham Hall, Kent; Drayton House, Northamptonshire; Amesbury House, Wiltshire, and Tyttenhanger in Hertfordshire. In addition he executed the mansion known as Thorpe Hall, near Peterborough, together with Uppington Manor and Walcot Hall in the same county. His ability is exhibited the better in his work at Ramsbury Manor, Wiltshire, executed for a member of the Pembroke family, which is an example of the reign of Charles II, and at once marks the transition and highwater mark of seventeenth century decoration.

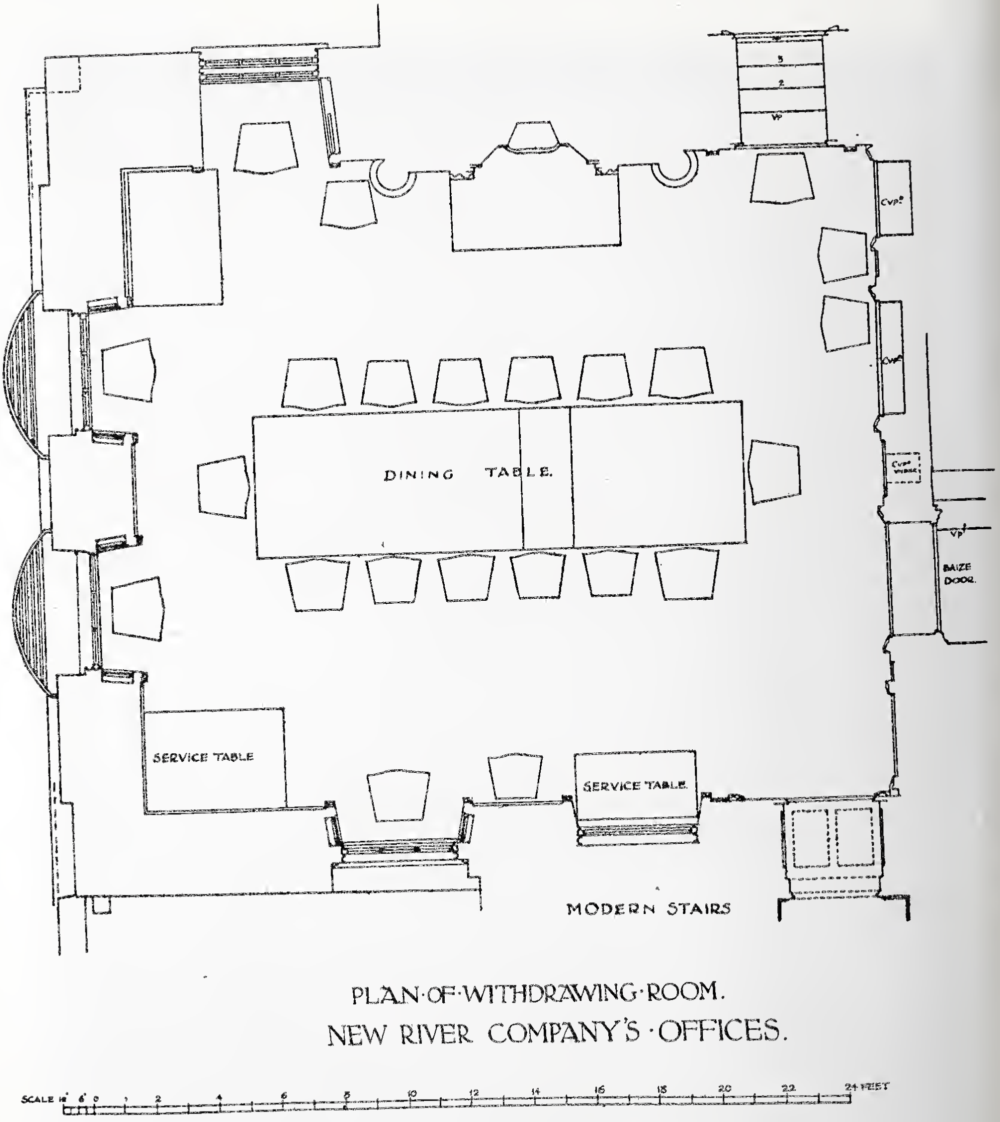
The great fire of London in 1666 has been called Sir Christopher Wren's opportunity; it brought out the best qualities of a remarkable architectural genius. Wren instilled in all his productions a refinement and a stately dignity which were commendable to king and courtiers alike; and these productions have since been preserved, because of the elegance and charm that they exhibit, for the education and interest of posterity. Wren's first works were executed during the reigns of William and Mary and Queen Anne. His project, in competition with Evelyn, for rebuilding the city of Lon-



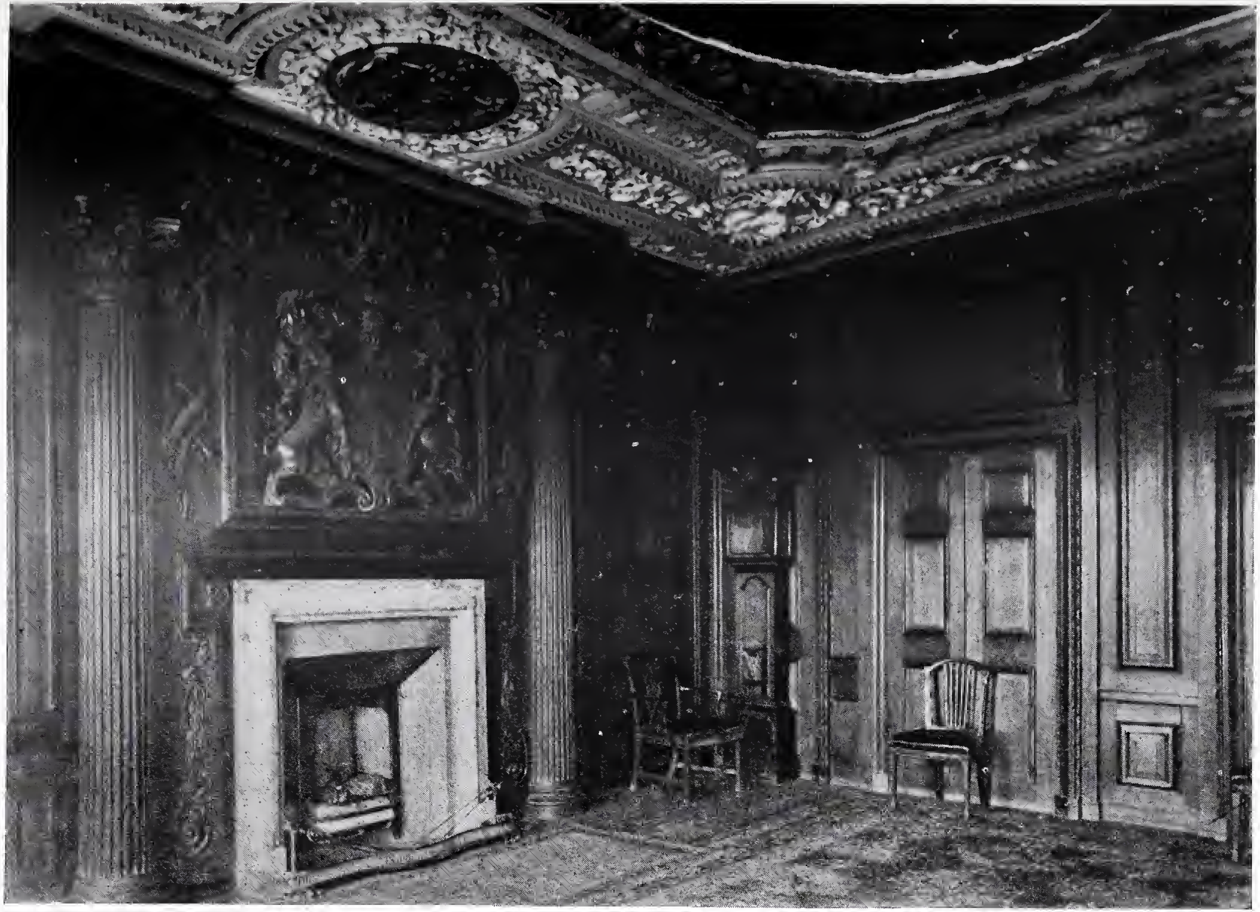
COAT OF ARMS IN CARVED OAK OVER-
MANTEL—BROMLEY-BY-BOW PALACE.
(IN VICTORIA AND ALBERT MUSEUM.)



TUDOR BEDROOM AT THE COMMANDERY, WORCESTER. TIME OF HENRY VIII.


3
2
Vp
Cvpᵈ
Cvpᵈ
Cvpᵈ Under
Vpᵗ
BAIZE DOOR.
DINING TABLE.
SERVICE TABLE
SERVICE TABLE.
MODERN STAIRS
PLAN·OF·WITHDRAWING·ROOM.
NEW RIVER COMPANY'S·OFFICES.
SCALE 12" 6" 0 1 2 4 6 8 10 12 14 16 18 20 22 24 FEET

PLAN OF WITHDRAWING ROOM, NEW RIVER COMPANY'S OFFICES. FOR MEASURED DRAWINGS OF OAK ROOM, SEE OPPOSITE PAGE 384.



BOARD ROOM, NEW RIVER
COMPANY'S OFFICE, LONDON.

don after the fire, was a masterful plan, showing an arrangement by which the many churches which he subsequently built could be placed to great advantage, although giving full regard to traffic considerations. Wren's plans and model for St. Paul's Cathedral were submitted for approval in 1673, and this noble fane was commenced about two years later on a new design, the fabric taking thirty-five years to complete.

During the interim Hampton Court Palace and Chatsworth were erected, two of the most palatial buildings of the time in England.

Chatsworth was built for the Duke of Devonshire by William Talman, a famous architect of much artistic taste, who had previously assisted Wren at Hampton Court Palace. Having regard to this fact it is not surprising to note similar characteristics between the two places, especially as regards planning. They both have internal courtyards, and the inner doors of the state rooms open opposite each other in order to give a long vista through the rooms on the plan of Versailles and elsewhere. This era is notable for a special change in the methods adopted in the treatment of joinery and the large scale obtained by increasing the size of the divisional panels of the rooms. As wood could not be obtained in sufficiently large sizes without shrinking unduly, it was necessary to join lengths together to make out the full widths required. This led to quartering the panels and the use of parquetry to obtain decorative features without the aid of sculpture and carving.

The utmost advantage, however, was taken of every salient point to exhibit fine carvings, of which a great variety is to be seen at the places above mentioned. Space would fail to tell of the beautiful pendants by Grinling Gibbons in the chapel at Chatsworth, of the pen of Watson in the principal state room, and the violin painted on the central doors. The art of that day was full of tricks and surprises, and Grinling Gibbons has left at Chatsworth a masterpiece in the finely carved cravat and game which ornaments the wall of the angle state room. It is questionable whether Gibbons ever visited Chatsworth. He was fully occupied with his assistants at St. Paul's Cathedral and Hampton Court Palace, and doubtless sent the chapel carvings by road when completed.

Samuel Watson and his assistants fully justified the notoriety and admiration they acquired in striving to outdo the master, and the forty years' labor spent continuously by Watson on one mansion is sufficient evidence of the trust and confidence placed in him by the Duke of Devonshire. Nor was he the only famous artist there; Gabriel Cibber, the sculptor of the fine reredos in the chapel, was also possibly the author of the monument in the Estate church, for he was employed extensively at Chatsworth, as was also Antonio Verrio, who was responsible for the chapel ceiling and work in the great hall and the "Verrio" bedroom, which has not a single molding, but is painted from ceiling to floor and over the gib-door.

Unfortunately, a large portion of the Verrio ceiling to the chapel gave way a few years ago, but was very faithfully restored by the present Duke's architect, Mr. Romaine Walker.

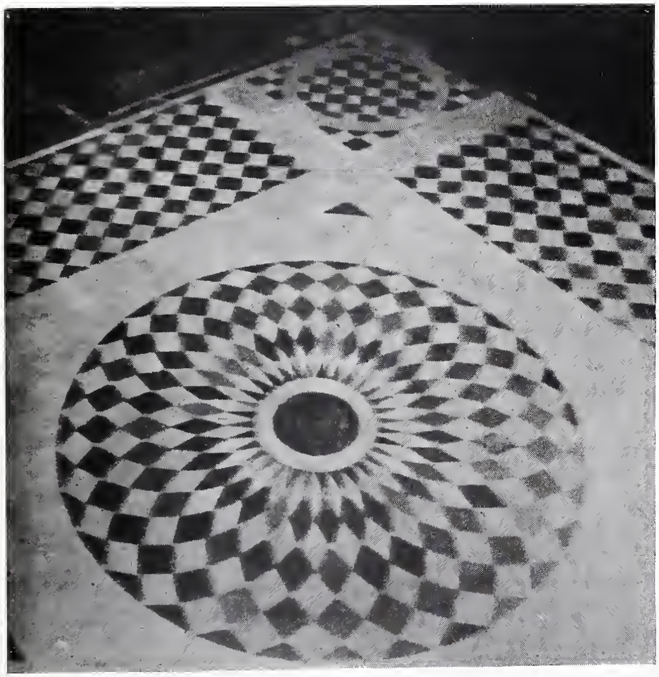
There are at Hampton Court Palace many interesting chimneypieces in the state rooms, some of the anterooms having nicely designed and executed angle chimneypieces with stepped shelving over to hold china and nicknacks. A favorite example is that in William III's closet, which has in addition some good limewood carving above the shelves where the top is curved back to the angle of the wall. Near this room is the Queen's Chapel, a delightful composition with coved octagonal ceiling, vaulted up, so to speak, to a central skylight, which latter unfortunately makes it very difficult to photograph, as it is practically the only source of light to the room.

There are many other features and rooms of interest in the palace: the paneling to reredos and pews in the Royal Chapel; the many private apartments of royal guests; the relics from bygone ages, such as the Charles I carved altar rails, the ceilings, and joinery details, the patterns of stone paving on the stairs and the wrought iron work—all of which it would take many pages to illustrate and describe.

This movement in the direction of carving moldings and spaces to chimney-pieces and overdoors became general. It was followed by Hawksmoor in his charming composition at the Orangery at Kensington Gardens; while there is preserved in the Victoria and Albert Museum, London, a fine room from No. 3 Clifford's Inn, known as the Penhallow Room, dated 1686. The chimney-piece contains the Penhallow arms quartering Penwarin in the centre of the carved composition. The room was paneled by one of the law students residing in Clifford's Inn Chambers, London; it being then the practice to lease certain chambers in the Inn for the lifetime of the tenant, in consequence of which the students felt justified in incurring some expenditure upon their leasehold property, even when that property was confined to only a portion of a house.

Previous to this, in 1670 to 1673, the Hall of the Brewers' Company and many other of the Livery Halls of London received additions by way of oak paneled board rooms or banqueting halls. The Brewers' Company's Hall is situated in Addle street, City of London, and has a somewhat quaint finish, lacking the refined detail of work supervised by Wren, while exhibiting much decorative interest. The ceremonial chairs and furniture are also of the period and add considerable value to the rooms from this fact.

There is a fine screen at the end of the hall, over which is the minstrel gallery; while adjacent to it is the board room, where an inscription over the mantelpiece contains the information that Samuel Starling, Lord Mayor, caused the room to be wainscoted in 1670.



MARBLE PAVEMENT—QUEEN'S HOUSE, GREENWICH.

·INDVSTRIAL· HOVSING·DEVELOPMENTS ·IN·AMERICA·

By LAWRENCE VEILLER
Secretary of the National Housing Association

PART II

THE GOVERNMENT'S STANDARDS FOR WAR HOUSING

Mr. Veiller, who is the foremost authority in the United States on housing legislation, not only prepared the framework for the Government's Standards, but took part in working out the final determinations.—Editor.

ONE of the many interesting and unexpected by-products of the war has been the inauguration in this country of the policy of building workingmen's dwellings by the Federal Government. For years Great Britain and other European countries have carried on such a policy. Although a few persons have urged the adoption of a similar policy in America, America has been slow to follow this suggestion. It has seemed to many that the building of houses for workingmen by the Federal Government was an undue interference with the rights of the individual, and those of a conservative mind have feared greatly the inauguration of such a policy and what might come from it.

But war changes everything. Now, irrespective of what should be the Government's policy in normal or peace times—whether it should follow the example of Great Britain, France, Belgium, Germany and other countries in aiding the building of workingmen's dwellings, or whether it should still continue to hold its former position of aloofness—the exigencies of war have forced the Federal Government to take up the building of workingmen's dwellings. Those in the seats of the mighty have had forced upon them the conclusion that if the war is to be won by the Allies and is not to be drawn out and prolonged indefinitely, a thing, apparently so remote as the housing of the workers, may be a determining factor.

As early as last spring farsighted men began to realize the situation. They pointed out then that unless steps were taken to properly house the workers in shipyards and war industries the production of ships and munitions would be greatly retarded. Various official bodies took the matter up, commissions were appointed, testimony was taken at Washington and a vast fund of information accumulated showing the absolute necessity of action along these lines. Then came unending delays—conferences with high officials, hesitation upon the part of the Government in embarking on this new policy—finally, but not until February, the introduction in Congress of legislation, appropriating in two different bills, $100,000,000 to be expended for the purpose of housing workingmen in the shipyards and in other war industries, One of these bills is now law. It appropriates $50,000,000 for this purpose to be expended by the Shipping Board and gives to that board broad and far-reaching powers to enable it to house workers in the shipping industry: the power to commandeer buildings; to acquire land by condemnation or otherwise; to develop transportation facilities; to build entire communities, if necessary, and finally to construct buildings and either rent or sell them, or hold and manage them, for the housing of the workers.

ONE HUNDRED MILLIONS FOR HOUSING.

A second bill appropriating an additional $50,000,000, and granting similar powers to the Secretary of Labor to be exercised by him through a Housing Administrator and to perform for the Army, the Navy, the Aviation Board—in short for all war industries other than shipping—the same functions as are performed by the Shipping Board in the housing of workers, was introduced in Congress early in February and was expected to have become a law weeks ago. At the time of going to press with this article this bill still hangs fire in the House. No one apparently knows why. The whole war is being delayed and imperilled by the failure of Congress to act in this respect.

While waiting Congressional action, however, the Housing Administration of the Labor Department has not been idle. Otto M. Eidlitz, the well known New York builder, who was appointed last fall by Secretary of War Baker as a Housing Committee of the Council of National Defense and who in February was appointed by the Secretary of Labor as Housing Administrator, has been working literally night and day at Washington as a "dollar a year man" for the past six months in an endeavor to anticipate the action of Congress and be prepared to act immediately upon receiving from Congress the powers and appropriation necessary to enable him to act. With Mr. Eidlitz has been associated a devoted group of public-spirited professional men—architects, city planners and others—who, as his aides, have similarly been working night and day under high pressure.

While, of course, the most important function to be performed through the Government's taking over the building of houses for workers in shipyards and war industries resides in the speeding up of the war, there is an important by-product to come out of all this effort which students of housing are vitally interested in.

Every one has recognized that workingmen's dwellings built by the Government, or with Government funds, would influence construction in this field for many years to come. As one observer put it, the Government's action will stamp for the next hundred years the type of house that is to be built for industrial workers. Irrespective of whether this statement is correct or not, there can be no question but that the standards adopted by the Government for the housing of workers will have a potent influence upon the housing of the workingman in this country for many years to come.

Partly because of the recognition of this fact, but primarily because of the recognition of the fact that unless houses of the right kind were built, it would not be possible to attract and *hold* the right kind of workers in many communities, the Housing Administration at Washington has set itself for many months past to the task of formulating standards which should govern in the construction work to be undertaken with governmental funds.

THE ADMINISTRATION'S POLICY.

The policy of the Housing Administration, as thus far announced, is to encourage the formation in each locality of a responsible housing corporation, organized and financed by the leading business men of that community, and to loan to that corporation a very considerable proportion of the funds needed for the building of workingmen's dwellings; as a rule, the Government plans to lend 80 per cent. of the total capital required. While the Housing Administration expects to function chiefly in this manner it also recognizes that there will be cases where it will be necessary for the Government to do all the work itself; for, there will be communities where there are isolated plants and where there is no possibility of local capital being interested or secured.

Under whatever system it operates the Housing Administration has recognized the following principles:

First: That in order to attract and hold the right kind of skilled worker it must build houses of an attractive type; houses that will not only provide the essentials of light and air, shelter, warmth and convenience of living, but also be reasonably attractive.

Second: That in order to protect the Government's investment in the property the houses must be built substantially and well.

Third: That in order to have the property of use after the war the houses must similarly be built substantially and attractively.

STANDARDS OF TYPES OF HOUSES.

For all of these reasons the Housing Administration has been hard at work for some months past formulating "Standards of Types of Houses for Permanent Construction," which it expects to have followed where houses are built with Government money. The ARCHITECTURAL RECORD has been privileged in obtaining an advance copy of these Standards, which it is expected will be issued to the general public as we go to press with this issue. The Standards as presented in this article represent the Standards suggested by the Housing Administration, although there may be in several respects minor changes subsequently to be adopted by the Department of Labor.

While the Standards thus adopted are not intended as inflexible requirements, it is announced that any plans which fail to conform to them are not likely to be accepted unless supported by very strong reasons. Local building codes, housing laws and similar ordinances, where they exist, are to be followed except where they permit lower standards than those of the Housing Administration.

The architectural profession of the country will be vitally interested in the Standards that have been adopted, not only because of their bearing on such work as individual architects may expect to have with the Federal Government, but because of their wider significance as marking the standards which should be attained in the construction of workingmen's dwellings.

NINE TYPES OF HOUSES.

The Standards provide for nine different types of buildings, as follows: the single-family house; the two-family house (one family upstairs—one family down; where two families are side by side with a division wall between, the type is known as the "semi-detached single-family house"); the single-family house with rooms for not more than three lodgers or boarders; lodging house for men; hotel for men; lodging house for women; hotel for women; the tenement house, and the boarding house.

There are some 18 standards or provisions which have been grouped under the title "General Provisions" which are common to all of these types of buildings. In addition there are certain special provisions that have been laid down for each type. Types 1, 2 and 3—viz., the Single-Family House, the Two-Family House and the Single-Family House with rooms for not more than three lodgers or boarders—are grouped together and come under practically the same requirements.

The Lodging House for Men and the Hotel for Men are grouped together and come under practically the same requirements. Similarly with regard to the Lodging House and Hotel for Women. These two types come under practically the same requirements though they differ in some important respects from the requirements for the housing of men. The Tenement House and Boarding House have each their own special requirements.

SIGNIFICANT PRINCIPLES.

The significant things in these Standards, some of which really mark revolutionary changes in the housing of workers, are the following:

1. The declaration against the tenement house as a means of housing workers set forth as follows:

"Tenement houses and apartment houses are considered generally undesirable and will be accepted only in cities where, because of high land values, it is clearly demonstrated that single and two-family houses cannot be economically provided, or where there is insistent local demand for this type of multiple housing. In any case, they will be accepted only where the Housing Board is convinced that local conditions require or justify their use. They must conform in general to local building ordinances, to the general provisions of these standards and to other special provisions to be issued by the Housing Board."

2. The requirements for light and ventilation, viz., the enunciation of the principle that in most cases, especially in the case of row or group houses and tenement houses, the houses shall not be more than two rooms deep, thus doing away with long and narrow courts. In fact the court as generally known is outlawed even in the case of tenement houses. For such buildings a treatment with a large interior park is the treatment required.

3. The declaration that there shall be an adequate space between adjacent buildings, that either such side yards shall be adequate or that the houses shall be built in rows or groups. This standard marks a high-water mark in the housing practice of the country and if followed throughout the country will revolutionize present practice. In place of the present inadequate narrow slits and alleyways—often 3 feet and generally not more than 6 feet between buildings—the new standard requires 20 feet between adjacent buildings and insists upon a minimum of 16 feet. Unless this can be provided the houses must be built in rows.

4. Similarly there has been an equally important recognition of the importance of an adequate open space between the backs of buildings. The Standards impose a requirement for a minimum distance of 50 feet, with a minimum backyard of 20 feet in all cases. The desirability of setbacks at the front of the house is also recognized.

5. The absolute prohibition of living quarters in basements and cellars.

6. The requirement for through or cross ventilation. Moving air has come to be the vital principle in the modern science of ventilation.

7. The barring out completely of barracks, bunk houses and dormitories of the usual type and the substitution for them of dormitories housing each man in a separate single room of adequate size.

In addition to these striking and fundamental advances in housing standards there are numerous details, all of which go to make for better living conditions, which mark distinct advances and which will be of material assistance to architects throughout the country in the planning of workingmen's dwellings, irrespective of whether they are to be built with Government funds or not. Some of these we believe are sufficiently interesting to be worth commenting upon here.

CLOTHES CLOSETS IN EVERY BEDROOM.

For instance, the Administration has felt it important to require that in all types of houses—boarding houses, lodging houses and hotels, as well as in private dwellings—every bedroom shall have a clothes closet opening from the room. It has barred out the built-in wardrobe dresser and it has even gone so far as to suggest a minimum depth for clothes closets and require them to be supplied with rods so as to take coat hangers. It also requires every closet to have a door. To many this may seem like going into matters of detail of comparatively minor importance, but it is just such details as these which make or break enterprises of this kind. In some parts of the country, partly for economy's sake, but also through a mistaken idea that the clothes of workers need special fumigation and airing, closet doors are omitted. This is a source of great discomfort and inconvenience to the tenants. A workingman's wife is no different from anybody's else wife. She dislikes just as much as does any other woman having dust or dampness pour in on her clothes. Similarly, so simple a thing as the requirement for providing rods in each closet to take coat hangers has an importance way out of proportion to its cost. In the first place, it more than doubles the capacity of the closet. There are probably not five industrial housing developments in the country where such rods are provided and in many the clothes closets are built so narrow that even if a rod were provided a clothes hanger couldn't be used on it. For this reason the Administration has felt it necessary to impose a minimum depth of 22 inches in all closets.

ARRANGEMENT OF HALLS, STAIRS AND DOORS.

One of the things that will not be found so stated in the Standards, but which has had very careful consideration, is the arrangement of halls, stairs and door openings so that heavy pieces of furniture such as are common to workingmen's families, may be taken up and down stairs and inside of rooms without having to take the house apart as is sometimes the case in workingmen's dwellings of the commercial type. It ought not to be necessary in such houses to take the piano or the brass bed, like a safe, up through the outside windows, but it frequently happens. Moreover, the houses built with Government money will be such that the decencies of life and death can be observed and a coffin can be taken down stairs without standing it on end. If any one thinks that this is not an important matter he has little knowledge of the feelings which control the workingman. He resents such an indignity to the remains of some one dear to him just as much as would any of us. And so the Government requires that "halls, stairs and doors shall permit the easy moving of furniture."

In very recent years a few architects, especially those who have had their training in Paris, have adopted the practice of planning the furniture in the rooms. It is a most important practice. In the average workingman's dwelling it is honored more in the breach than in the observance. It too frequently happens that, when the workingman puts his furniture in his nice little house, he finds no place for his beautiful brass double bed, which is the chief article of furniture in the average mechanic's home and is to be found quite as often in the home of the foreign laborer as it is in the home of the American mechanic.

Consequently, windows that have been provided to furnish light and ventilation are practically useless, for the bed is jammed up against them and the window as a result is never or seldom opened and the shade is kept pulled down, thus defeating the architect's purpose. Similarly, closet and room doors are often so placed as to get in the way of nearly all of the furniture. In the new Standards these difficulties have been anticipated and it is required that beds shall be indicated on plans, to scale, and it is pointed out to the architects, some of whom seem to be without that domestic knowledge, that double beds are 5 feet in width by 6 feet 6 inches in length and single beds three feet wide. It might at first blush seem to the ordinary observer that it was hardly necessary to go into so much detail on this matter, but the Administration has already received plans from responsible architects of good standing where every double bed was too narrow and was really a three-quarter bed—something that is seldom found in workingmen's homes—with a result that the bed when shown on the plans in the proper size did get in the way of doors and windows.

The Standards also add this important provision: "It is recommended that beds be free-standing and not located in a corner or with the side against a wall." Here again a necessary warning has been served upon the architectural profession. The writer recently saw a very attractive and charming industrial housing development, one of the best in the country, where the architect had prided himself upon his forethought and intelligence in planning in all of the beds in the bedrooms, but he was either a bachelor or had never had the experience of helping his wife make the bed. The result was that all of his beds were shown jammed up in a corner with one side against the wall. He was greatly surprised to learn that the housewife didn't like beds located in that manner; that it was impossible to make a double bed thus situated without pulling out the bed and pushing it back again, and that this was a nuisance. In addition, from the point of view of health, it is highly desirable that people should not be asked to sleep with their noses up against the wall. These defects, so frequently encountered in the workingman's dwelling, have been anticipated in the new Standards and it is hoped will be obviated.

ARRANGEMENT OF SINKS AND WASHTUBS.

A similar consideration of the convenience and comfort of the housewife is found in the requirement that sinks and washtubs shall have the rim 36 inches above the floor. This will prevent many an aching back.

OUTWARD APPEARANCE.

Coming to the question of outside appearance, we find that board fences are barred out and hedges or open metal fences encouraged. Provision for drying clothes is to be made and it is suggested that where metal fences are used the fence standards can be advantageously designed for this purpose. The backyard vegetable garden is not to be so much considered as to make the dividing up of the property into deep lots a desideratum to be sought after. It is suggested instead that the European practice of centrally located and conveniently accessible allotment gardens be followed rather than attempting in new developments to provide deep lots for the purpose of giving each man his own garden at the back of his house. Porches are stated to be desirable, but must be built of durable construction with proper foundations and must not encroach on the side yard or unduly darken rooms.

When it comes to the question of materials of exterior walls, the Standards very properly state that this question is dependent upon local supplies. Brick, terra cotta, stone or concrete are preferred for all outer walls. In the case of buildings housing a number of people, such as lodging houses and hotels for men and women, outer walls of frame, except in the case of one-story buildings, are absolutely prohibited and frame tenements are similarly prohibited. Wood frame, either clapboard, shingled or stuccoed, is permitted for detached or semi-detached single-family and two-family houses not over two and one-half stories high. Division walls between houses built in rows or groups are required to be either of brick, terra cotta, stone or concrete.

ELIMINATION OF WINDING STAIRS.

One of the questions which will make many architects put more study upon the plan of a workingman's dwelling than they have ever put before is the elimination of winding stairs. These are absolutely barred out for all classes of buildings; for, it has been found in practice that by a little bit more careful study the winder can be avoided, and it is the general experience among those familiar with dwellings of this kind that such stairs are very objectionable, that not only children fall down them and get injured, but that adults find great difficulty in getting accustomed to them and frequent accidents result. A maximum height of 8 inches for risers and a minimum width of 9 inches for treads is required.

VENTILATION.

When it comes to questions of ventilation and light and air, there is nothing very startling or new in the Standards adopted. Obviously the Federal Government could not bring itself to loan money upon houses containing dark rooms, or even on houses with rooms inadequately lighted or ventilated. The Standards require that every room in every type of building shall have at least one window of not less than 10 square feet in area opening directly to the outer air. In tenement houses and in lodging houses and hotels 12 square feet is the minimum required. This doesn't mean that *every* window must be 12 square feet in area, for there has been no thought of putting such a straitjacket upon architectural design. All that is required is that there shall be in every room at least one window containing this minimum area. The greatest latitude is given architects in utilizing windows as an essential part of the design of the house, and casement, pivoted and double-hung sash are all permitted and encouraged. While one window is required in every room, it is stated that two windows in each room are generally preferred; though it is recognized that in the small bedrooms one window is sufficient. Special emphasis is placed upon the desirability of cross-ventilation to secure moving air, and it is pointed out that this should be as direct as possible and it is suggested that where practicable communicating doors be provided between bedrooms for this purpose; that where this is not possible transoms be provided, and doors and windows be so located as to make cross-ventilation as nearly direct as possible.

PLUMBING.

The best practice in plumbing requirements is followed. The house drain under the house and 5 feet outside of it is required to be of extra heavy cast iron. Soil and waste lines similarly are recommended to be either extra heavy cast iron or genuine wrought iron and are required to be extended through the roof. One departure from the usual plumbing practice, and one which will appeal to architects as an economy and as a practical measure, is the permission to use a 3-inch soil stack where not more than two waterclosets are placed on one stack. Antiquated types of fixtures are naturally barred out. Plunger, pan, long-hopper and range closets are prohibited; and waterclosets are required to be of porcelain and either wash-down, syphon or syphon-jet type, in all cases with an individual flush tank. The new type of open-front seat so important in preventing venereal disease is recommended. Outdoor waterclosets are absolutely prohibited, as are privies; cellar waterclosets are to be permitted only where they are supplementary to the accommodations required under the Standards, and even then must be constructed under conditions which will not give rise to abuse. One very important requirement is that access shall be had to all watercloset compartments either from a hall or vestibule and never solely from a room. This is essential for privacy. Wooden sinks and wooden washtrays are barred out. Hot and cold water supply is to be provided for all fixtures. Exposed pipes are preferred, though not always required, and when exposed preference is expressed for the use of wrought iron. Special emphasis is laid upon the desirability of concentrating pipes where possible, and especially in Northern climates, in keeping them away from outside walls so as to avoid freezing.

HEIGHT OF BUILDINGS.

Single-family houses are to be kept down to two and one-half stories in height and two-family houses are limited to two stories. All other types of buildings—namely, tenement houses and hotels and lodging houses—are limited to four stories. While cellars are not required in all cases, nor are they to be deemed essential under the whole house in the case of private dwellings and two-family houses, a minimum height of 6 feet 6 inches is required and all cellars must be well lighted with good cross-ventilation and dry and well paved. Where cellars are omitted the house has to be set up on posts, stones or a wall, at least 2 feet above the ground, and this space is required to be drained, enclosed and ventilated.

ROOMS.

An attempt is made to guide the architectural profession as to what is the best practice and the desires of the working population with regard to room accommodation. In workingmen's dwellings that have been commercially built in this country a mistake has often been made in the past in providing too many rooms; the six-room and seven-room house predominating to a very large extent. The average workingman does not want so many rooms. With a normal family he cannot use so many rooms and the result is that he is often induced to take in roomers or lodgers; the temptation to use the extra rooms in this way being almost irresistible. Moreover, the average mechanic does not wish to spend the money necessary to furnish so many rooms, nor can he afford to heat them, nor does his wife wish to take care of so many rooms. In the case of "common labor," as a rule the workingman cannot afford to pay for more than four rooms, though he generally is forced in most parts of the country to rent a house containing either five, six or seven rooms.

With full recognition of these facts the Housing Administration has suggested in the case of the single-family and two-family houses that the best type of house for the higher paid worker is a five-room type consisting of parlor, large kitchen, three bedrooms and bathroom. As an alternative type of house it is suggested that in place of a large kitchen a dining room and kitchenette may be provided. Architects are cautioned against providing many houses of the four-room type for the higher paid workers. In some cases where there are small families these will be desired, but as a rule the higher paid worker should have at least five rooms. A similar caution is urged with regard to the six-room type of house consisting of parlor, dining room, kitchen and three bedrooms and bath. The Administration states that such a type is suited only for abnormally large families and should be provided sparingly. It adds that for the lower paid workers the four-room type of house is the desirable type and that it should consist of a parlor, a kitchen, two bedrooms, and a bathroom. An interesting provision is found in the requirement that where a house has more than seven rooms it is to be treated as Type 3, viz., a single-family house with rooms for lodgers or boarders. This means that the additional bedrooms must be so arranged and located as to insure privacy of access for boarders, and privacy of toilet accommodations. In such houses it is required that lodgers shall have access to their bedrooms and to a separate watercloset compartment without having to pass through the rooms designed for the use of the family. This will do away with very serious evils that now exist in connection with the practice of taking roomers in workingmen's dwellings.

SIZE OF ROOMS.

In many workingmen's houses that have been built in the past the rooms are frequently too small. In order to bring about economy of construction, and also sometimes because of disadvantageous lot units, and in the case of the speculative builder a desire to "skin the job" as much as possible, has led to the construction of houses with rooms of inadequate size. The Housing Administration, in order to prevent this kind of evil in Government construction, imposes a minimum size for bedrooms in private dwellings, two-family houses and tenement houses, of 80 square feet, with a minimum width of 7 feet. In lodging houses and hotels it permits individual bedrooms as narrow as 6 feet in width and as small as 60 square feet in area, though it recommends in such types of buildings bedrooms of 70 square feet in area with a 7-foot width as a minimum. In all family dwellings, whether private house, two-family house or the tenement, one large bedroom is required to be provided of a size not less than 10 by 12 feet and preferably not larger than 12 by 14 feet.

Some architects in their desire to give ample space, sometimes provide rooms that are too large. In order to avoid this certain maximum sizes are indicated. This is quite important; for, the bedroom that is too large encourages the taking in of roomers and lodgers and is used practically as a dormitory. The house that has too large rooms is also unattractive to the workingman, who finds it difficult and expensive to heat, and he also finds that the ordinary furniture, such as he can buy in the department store or such as he possesses, will not fit it. This is an important consideration to the workingman; in fact, a room that will nicely take a 9x12 rug will be found to be the size room that the workingman will generally desire. For these reasons the Administration has suggested a maximum size for all of the large rooms—namely, parlor, dining room, kitchen and large bedroom—of 12 by 14 feet, with a minimum size for these rooms of 10 by 12 feet. Kitchenettes are permitted only where there is a separate dining room. In such case the kitchenette may be as small as 6 feet in width with a minimum area of 70 square feet.

HEIGHT OF ROOMS.

In private dwellings and two-family houses, as well as in lodging houses and hotels, rooms 8 feet high are permitted. In the latter class of buildings the public rooms are required to be from 9 to 12 feet in height. In tenement houses, following the practice in most cities and the standards of most tenement house laws, a clear height of 9 feet is required for all rooms. Attic rooms are encouraged in order to make possible the greater use of houses with pitched and gambrel roofs; but an attempt is made, however, to prevent such rooms from becoming either unsanitary or uncomfortable because of lack of proper ventilation, or of inadequate height, or too great heat in summer.

In all cases a roof air space of at least 8 inches is required between the top of the ceiling and the under side of the roof; this space to be provided with adequate waterproof openings for ventilation at both ends, if practicable. In addition, where there are attic rooms it is required that there shall be a height of 8 feet throughout a floor area of at least 40 square feet; that there shall also be a clear height of not less than 6 feet over an area of at least 80 square feet, with a minimum width of 7 feet throughout that area. The practice of filling up the attic in a private dwelling with roomers is discouraged by the requirement that in two and one-half story houses a single bedroom only may be provided in the attic.

FIRE PROTECTION.

Every building over three stories high must be a fireproof building throughout. In the hotels and lodging houses for both men and women the buildings are required to be divided up at intervals of approximately 3,000 square feet by fire walls of brick, terra cotta, stone or concrete, with fireproof self-closing doors at all openings. In hotels and lodging houses the stairs and stair halls are required to be fireproof and enclosed in walls of brick, terra cotta, stone or concrete with fireproof self-closing doors at all openings. Dumb-waiters and elevators are not permitted in stair enclosures, but are required to be enclosed in separate fireproof shafts with fireproof doors, those for dumb-waiters to be self-closing. In these types of houses inside cellar stairs are permitted, but are required to be enclosed similarly with fireproof walls with self-closing fireproof doors.

MEANS OF EGRESS.

In hotels and lodging houses for both men and women additional means of egress to the street or yard must be provided either by an additional flight of stairs, by a fire tower or by a stair fire-escape. The fire-escape is considered the least desirable method. Such additional means of egress are required to be remote from the main stairs and to be separated from it and from the other parts of the building by fireproof walls, with fireproof self-closing doors at all openings, and to be so located that no room shall be more than 40 feet away from a means of egress. Similar provisions are made with regard to tenement houses except that, of course, in this class of building the egress is required to be direct from each apartment or flat instead of from a public hall.

SOME UNIQUE FEATURES.

Hotels and lodging houses for both men and women, especially for women, present some novel features which the writer believes will become the accepted type for buildings of this kind. The type of building itself, a city hotel for working men and working women, is a new type and there has been comparatively little experience on which to base conclusions. What experience there has been, however, has been freely availed of. Some of the interesting features of the women's lodging house and hotel which may be cited are the following:

First, the suggestion that a girl's lodging house or hotel should provide accommodations for not less than 75 girls; that it is uneconomic to house less, and that similarly it should not contain more than 150 girls, as it has been found with more than that number the difficulties in management and supervision are too great. The same considerations do not apply in the case of men.

The providing of so called "beau parlors" in the women's lodging houses or hotels where the girls can receive their men callers under proper conditions and yet be under the observance at least of the matron, without embarrassing the girl, is one of the interesting and admirable features that have been worked out.

In addition, the arrangement is suggested that on the first floor of such buildings there shall be provided a matron's office so placed as to oversee the single entrance and the access to the sleeping quarters. A kitchenette, a sitting room and a sewing room are to be provided on at least alternate room floors so as to give the girls a chance to make candy and to cook up such midnight messes as are dear to the heart of youth. The opportunity also to sit and do their mending without having to go down stairs is an important one. Similarly, provision is made for a room, preferably in the basement, where the girls can wash their clothes.

The hotel type corresponds very closely to the lodging house type except that in addition it is required to have a dining room and cafeteria with the necessary pantry, service rooms and kitchen.

One interesting detail that differentiates the women's lodging house from the men's is the requirement that in the women's general lavatory on each floor there shall be partitions between washbasins extending up five feet from the floor so as to give privacy. This is not found necessary with the men. Similarly, with the men, showers are provided, but for the women these are required to be body showers.

The Standards contain so many interesting details that we print them in full, believing that the architects of the country will care to see in precise form the standards that have been adopted.

While these Standards have been adopted by the Housing Administration of the Department of Labor we understand that the same Standards will practically be enforced by the Shipping Board, for the two departments of the Federal Government are functioning together in this matter.

TO SUM UP.

The country is to be congratulated upon the care, skill and wisdom with which Mr. Eidlitz and his associates in the Housing Administration have done their work. While the Standards which they have adopted represent in some respects important departures and advances over practice in the past, none of them can be said to be either extreme or idealistic. They are all eminently practical and represent sound common sense. The work has been well done.

TEXT OF THE GOVERNMENT'S STANDARDS FOR WAR HOUSING OF PERMANENT CONSTRUCTION.

THESE standards are not intended as inflexible requirements, but any plans which fail to conform to them are not likely to be accepted unless supported by very strong reasons. Local building codes, housing laws, and similar ordinances are to be followed except where they permit lower standards than herein set forth.

I. Types of Houses (Principal types only).

Type 1. Single-family house.
Type 2. Two-family house.
Type 3. Single-family house with rooms for lodgers or boarders.
Type 4. Lodging house for men.
Type 5. Hotel for men.
Type 6. Lodging house for women.
Type 7. Hotel for women.
Type 8. Tenement house.
Type 9. Boarding house.

General Provisions.

All types of houses to conform to these general provisions and in addition to certain special provisions as later indicated.

1. *Arrangement.* Row or group houses normally not to be more than two rooms deep.

2. *Basements.* No living quarters to be in basements.

3. *Closets.* Every bedroom to have a clothes closet, opening from the room. Built-in wardrobe dressers will not be accepted. Normally such closet to be not less than 22 inches deep and with door. Closets to be supplied with rods to take coat hangers.

4. *Cooking.* Gas preferred, but flue for coal stove to be provided, all flues to be lined. The question of whether or not cook stoves are to be provided with the house to be considered at the time materials are being ordered.

5. *Fences.* Board fences will not be accepted. Hedges or open metal fences desirable. Suitable arrangements for drying clothes to be provided. Where there are open metal fences the fence standards can be designed for this purpose.

6. *Furniture Space.* Beds to be indicated to scale on plans (double beds, 5 feet by 6 feet

6 inches; single beds, 3 feet by 6 feet 6 inches). Location of beds not to interfere with windows or doors. It is recommended that beds be free standing and not located in a corner or with the side against a wall. Space to be provided for two pieces of furniture in addition to bed. Halls, stairs, and doors to permit easy moving of furniture.

7. *Gardens.* Allotment gardens, conveniently accessible, preferable to increasing the size of the lot to provide for individual back-yard vegetable gardens.

8. *Lighting.* Electricity preferred.

9. *Materials of Exterior.* Materials dependent on local supplies; brick, terra cotta, stone, or concrete preferred. Outer walls to be insulated against dampness and condensation. Rat nogging to be provided. Roof to be fire resistive; leaders and gutters not essential unless drip will do harm.

10. *Open Spaces.* Side-yard space between adjacent buildings to be preferably 20 feet; minimum, 16 feet; such space to be increased proportionately for each additional story, or part of story, above two stories. If this space is not obtainable because of lot sizes or land values, houses should be built in rows or groups.

Rear-yard depth not to be less than height of building, nor in any case less than 20 feet. Minimum distance between backs of houses to be 50 feet. Layout should contemplate future location of garages, which, when not an integral part of the house, should preferably be at the rear of the lot, should not be located closer than 15 feet to the nearest part of house, and should not exceed one story in height.

Front yards or setbacks desirable where practicable; minimum distance from front wall of house to front wall of opposite house to be 50 feet.

11. *Plumbing.* House drain under house and 5 feet outside to be extra heavy cast iron. It is recommended that soil and waste pipes be extra heavy cast iron or genuine wrought iron. Soil and waste pipes to be extended through roof. A 3-inch soil stack preferred where not more than two water-closets are placed on one stack.

Water-closets to be porcelain and wash-down, siphon, or siphon-jet type, with individual flush tank. Open-front seat recommended. Outdoor water-closets will not be accepted. Privies will not be accepted. Cellar water-closets not permitted except where supplementary to accommodations herein required.

Access to water-closet compartments to be from hall or vestibule, never solely from a room. Plunger, pan, long-hopper, and range closets will not be accepted.

Hot and cold water to be provided to all fixtures, with proper drains and shut-offs. Wooden sinks and wash trays will not be accepted.

All fixtures to be separately trapped except in batteries of wash trays and combined sink and wash tray, where one trap is sufficient.

Venting of traps to conform to approved practice, except that the back venting of the top or only fixture on a line is not required. Sink and lavatory traps to be connected direct to the vertical wastes, and not to floor branches. Exposed pipes preferred, and, when exposed, wrought iron preferred. Where possible, lines to be concentrated and kept from outside walls.

12. *Porches.* Desirable. To be of durable construction, particularly the foundations; to be restricted from encroaching on minimum side yard or unduly darkening rooms.

13. *Rear Entrances.* In the case of row or group houses there may be access to the rear through minor one-way public streets. Such streets to be not less than 12 feet wide; to be properly paved, curbed, drained and lighted. Private alleys will not be accepted.

14. *Roof Air Space.* In every house there shall be a minimum clear air space of 8 inches between the ceiling and the roof; this space to be provided with adequate waterproof openings for ventilation, at both ends if practicable.

15. *Rooms, Number of.* Bathrooms are not to be counted as rooms.

16. *Stairs.* Risers to be not more than 8 inches high and treads to be not less than 9 inches wide. Winding stairs will not be accepted except in types 1, 2 and 3. Not more than two winders will be allowed in series. Treads must measure at least 9 inches wide 18 inches from rails.

17. *Ventilation.* Every room to have at least one window opening directly to the outer air. Two windows in each room generally preferred; one window sufficient in small bedrooms. Each room to have a window area of not less than 12 square feet.

Cross ventilation as direct as possible to be provided for all rooms through windows, transoms, or doors; communicating door recommended between bedrooms in row houses.

Every bathroom to have a window of not less than 6 square feet in area opening directly to the outer air.

Every water-closet compartment to have a window of not less than 4½ square feet in area opening directly to the outer air. A skylight in the roof, with an equal amount of glass area and provided with adequate ventilators, will be accepted in lieu of such window, but skylights are not desirable.

18. *Windows.* Minimum area to be meas-

ured between stop beads. Window head to be as near ceiling as practicable. Windows may be double-hung, pivoted, or casement. If double hung, upper and lower sash to be the same size. In cities with soft-coal smoke nuisance, minimum area to be increased.

Window frames to be designed to accommodate screens and outside shutters. In cold climates, weather strips are recommended.

II. Special Provisions for Types 1, 2, and 3.

In addition to complying with all general provisions, types, 1, 2, and 3 are to comply with the following provisions:

Type 1. Single-family house.

Type 2. Two-family house. ("Two-flatter," one family upstairs, one down. For "double house," see "Single-family house, semi-detached.")

Type 3. Single-family house with rooms for not more than three lodgers or boarders.

1. *Agreement.* Types 1 and 3 not to be over 2½ stories high. Type 2 not to be over 2 stories high.

When detached or semi-detached, types 1, 2, and 3 normally not to be over 3 rooms deep; when in rows or groups, not to be over 2 rooms deep except that the end house of row may be 3 rooms deep.

2. *Cellar.* To be well lighted, cross ventilated, dry, and paved or cemented. Minimum clear height under joists, 6 feet 6 inches. When hot-air furnaces are used, minimum height 7 feet. Cellar not essential under whole house. Where climatic or soil conditions make cellar inadvisable it may be omitted, in which case adequate provision is to be made for storing fuel. Where cellar is omitted, house to be set up on masonry piers or walls 2 feet clear from ground; space to be drained, inclosed, and ventilated.

3. *Grouping.* Single-family houses of the more expensive type preferably to be detached houses, but may be semi-detached or even attached in rows or groups. In other cases where land values permit, detached or semi-detached are desirable; otherwise attached in groups.

4. *Heating.* Provision to be made for heating houses. If not otherwise heated, bathroom to be heated from kitchen stove.

5. *Materials of Exterior.* Brick, terra cotta, stone, or concrete preferred; but wood frame clapboarded, shingled, or stuccoed permitted for detached or semi-detached houses not over 2½ stories high. Party walls between attached houses in rows or groups to be of brick, terra cotta, stone, or concrete.

6. *Plumbing.* Bathtub (shower is not sufficient).

Lavatory, to be preferably in bathroom.

Sink to be in kitchen; rim 36 inches above floor.

Washtubs with covers, preferably two, rim 36 inches above floor, to be set in kitchen or in well-lighted, dry, and ventilated cellar.

Water-closet to be inside the house in well-lighted and ventilated compartment, with window of 4½ square feet minimum area to outer air, and preferably with impervious floor not of concrete.

7. *Rooms, Height of.* Minimum, 8 feet.

Sloping ceilings and "knee walls" will be accepted only under the following conditions: Roof space above flat portion of ceiling to be of ample size and adequately ventilated; spaces between rafters of sloping portion to be adequately ventilated into roof space; bedroom to have greater window area and better cross ventilation than the minimum permissible for a standard flat-ceiling room; bedroom to have a minimum height of 8 feet over an area of at least 40 square feet with a minimum flat-ceiling width of 3½ feet, and a clear height of not less than 6 feet over an area of at least 80 square feet with a minimum width of 7 feet.

8. *Rooms in Attic.* As a rule, in 2½-story houses, only one bedroom to be provided in the attic.

9. *Rooms, Number and Use of.* In types 1 and 2: For higher-paid workers, five-room type preferred, with parlor, large kitchen, 3 bedrooms, and bathroom. Dining room and kitchenette may be provided in place of the large kitchen. Four-room type to be provided sparingly for higher-paid workers. Six-room type, with 4 bedrooms, or 3 bedrooms and parlor convertible into fourth bedroom, suited for abnormally large families only, and should be provided sparingly. Six-room type should normally have parlor, dining room, kitchen, 3 bedrooms, and bathroom.

For lower-paid workers, four-room type desirable, with parlor, kitchen, 2 bedrooms, and bathroom.

Any house having more than seven rooms to be treated as type 3.

In type 3, in addition to family quarters indicated above, single rooms for lodgers to be provided. In addition to the family water-closet accommodations, a water-closet compartment containing lavatory to be provided for the sole use of the lodgers. Lodgers to have access to their bedrooms and to their water-closet compartment without going through rooms designed for use of family.

10. *Rooms, Size of.* One large bedroom to be provided, size 10 by 12 to 12 by 14 feet.

Small bedrooms, minimum size, 80 square feet; minmum width, 7 feet.

Parlor, 10 by 12 to 12 by 14 feet.

Dining room, 9 by 12 to 12 by 14 feet.

Kitchen (where there is no separate dining room), 10 by 12 to 12 by 14 feet.

Kitchenette (only where there is a separate dining room), minimum width, 6 feet; minimum area, 70 square feet.

III. Special Provisions for Types 4 and 5.

In addition to complying with all general provisions, types 4 and 5 must comply with the following special provisions:

Type 4. Lodging house for men.

Type 5. Hotel for men.

1. *Arrangement.* Provision to be made for 75 men or more. Height limited to 4 stories, except in large cities.

2. *Cellar.* Minimum height, 7 feet; to be well lighted, cross ventilated, dry, and paved or cemented. Cellar not essential under whole building. Where omitted, building to be set up on masonry piers or walls 2 feet clear from ground; space to be drained, inclosed and ventilated.

3. *Fire Protection.* If over four stories high to be fireproof throughout.

If over 3 stories high, first floor construction to be fireproof.

If over 2 stories high, non-fireproof building the area of which exceeds approximately 3,000 square feet to be divided by fire walls of brick, terra cotta, stone, or concrete into areas not exceeding approximately 3,000 square feet each. All openings in such walls to be provided with fireproof self-closing doors. Adequate means of egress to be provided to street or yard by an additional flight of stairs, or by fire tower or stair fire escape (fire escape less desirable). All such additional means of egress to be remote from the main stairs and separated therefrom and from the other parts of the building by walls of brick, terra cotta, stone, or concrete, with fireproof self-closing doors at all openings. Such additional means of egress to be so located that no room shall be more than 40 feet from a means of egress. All main egress doors to swing out.

All stairs and stair halls to be not less than 3 feet wide in the clear and to be inclosed in walls of brick, terra cotta, stone, or concrete, with fireproof self-closng doors at all openings. All doors to stair halls to swing into stair hall without obstructing free passage.

Dumb-waiters and elevators will not be accepted in stair inclosure; they should be inclosed in fireproof shafts with fireproof doors, those for dumb-waiters to be self-closing. Inside cellar stairs to be inclosed with walls of brick, terra cotta, stone, or concrete, with self-closing fireproof doors. Standpipes with hose reels on each floor to be so located that any point can be reached with 75 feet of hose.

4. *Heating.* Except where connected with a central plant, provision to be made for independent heating.

5. *Material of Exterior.* To be brick, terra cotta, stone, or concrete, except that wood frame will be accepted for one-story buildings.

6. *Plumbing.* Minimum provision: One water-closet per 12 men; one urinal per 16 men; one lavatory per 8 men; one shower per 10 men; one bathtub per floor, provided there is not less than one per 50 men. Ratio to be increased where there are less than 50 men per floor. Floor and base of toilet rooms to be waterproof not of concrete. Sufficient water-closets to be provided in the cellar or basement for the accommodation of engineers, firemen, and laundry workers.

7. *Rooms, Height of.* Height for public rooms, 9 to 12 feet; minimum for bedrooms, 8 feet.

8. *Rooms, Number and Use of.* Each lodger to have separate room. Two-men rooms not permitted. (Cubicles and dwarf partitions will not be accepted.)

Each floor to have a general bathroom containing required showers, tub, and lavatories. Each floor also to have a general toilet room containing required water-closets and urinals. Each of the two rooms to have windows opening directly to the outer air, and to be separate but adjoining and communicating. Service closets with slop sinks and space for brooms and pails to be provided on each floor.

Smoking room, reading room, billiard room, physician's room, laundry for washing clothes, superintendent's office and adequate quarters for superintendent to be provided. Unless provided elsewhere in the community, bowling alleys to be in basement.

Hotel (type 5) also to have dining room and cafeteria with outside access thereto, and with pantry, service rooms, kitchen and toilet facilities for men and women employees. An additional general toilet room is to be provided conveniently accessible.

9. *Rooms, Size of.* Single bedrooms to have an area of 70 square feet and be 7 feet wide minimum.

10. *Ventilation.* Bedroom doors preferably to be placed opposite each other and to have transoms or slat panels.

11. *Windows.* One window in each room to have minimum area of 12 square feet between stop beads.

IV. SPECIAL PROVISIONS FOR TYPES 6 AND 7.

In addition to complying with all general provisions, types 6 and 7 must comply with the following special provisions:

Type 6. Lodging house for women.
Type 7. Hotel for women.

1. *Arrangement.* Provision to be made for 75 to 150 women (with less than 75 the unit is not economical; with more than 150 there are difficulties in management and supervision).

Height limited to 4 stories, except in large cities.

2. *Cellar.* Minimum height, 7 feet; to be well lighted, cross ventilated, dry, and paved or cemented. Cellar not essential under whole building. Where omitted, building to be set upon masonry piers or walls 2 feet clear from ground; space to be drained, inclosed and ventilated.

3. *Fire Protection.* If over four stories high, to be fireproof throughout.

If over 3 stories high, first floor construction to be fireproof.

If over 2 stories high, a non-fireproof building the area of which exceeds approximately 3,000 square feet to be divided by fire walls of brick, terra cotta, stone, or concrete into areas not exceeding approximately 3,000 square feet. All openings in such walls to be provided with fireproof self-closing doors. Adequate means of egress to be provided to street or yard by an additional flight of stairs, or by fire tower or stair fire escape (fire escape less desirable). All such additional means of egress to be remote from the main stairs and separated therefrom and from other parts of the building by walls of brick, terra cotta, stone or concrete, with fireproof self-closing doors at all openings. Such additional means of egress to be so located that no room shall be more than 40 feet from a means of egress. All main egress doors to swing out.

All stairs and stair halls to be not less than 3 feet wide in the clear and to be inclosed in walls of brick, terra cotta, stone, or concrete, with fireproof self-closing doors at all openings. All doors to stair halls to swing into stair hall without obstructing free passage.

Dumb-waiters and elevators will not be accepted in stair inclosure; they should be inclosed in fireproof shafts with fireproof doors, those for dumb-waiters to be self-closing. Inside cellar stairs to be inclosed with walls of brick, terra cotta, stone, or concrete, with self-closing fireproof doors. Stand-pipes with hose reels on each floor to be so located that any point can be reached with 75 feet of hose.

4. *Heating.* Except where connected with a central heating plant, provision to be made for independent heating.

5. *Materials for Exterior.* To be of brick, terra cotta, stone, or concrete, except that wood frame will be accepted for one-story buildings.

6. *Plumbing.* Minimum provision: One water-closet per 10 women, one lavatory per 6 women, one body shower per 10 women, one bathtub per 25 women. Ratio to be increased where there are less than 50 women per floor. Floor and base of toilet rooms waterproof, not of concrete. Dwarf partitions between lavatories to extend at least 6 feet above the floor and have curtains. Sufficient water-closets to be provided in the cellar or basement for the accommodation of engineers, firemen, and laundry workers.

7. *Rooms, Height of.* Height for public rooms, 9 to 12 feet; minimum for bedrooms, 8 feet.

8. *Rooms, Number and Use of.* Each lodger to have separate room. (Cubicles and dwarf partitions will not be accepted.) Rooms for two women not permitted. Each floor to have a general bathroom containing required body showers, tub, and lavatories. Each floor also to have a general toilet room containing required water-closets. Each of these two rooms to have windows opening directly to the outer air, and to be separate but adjoining and communicating. Service closet; with slop sink and space for brooms and pails to be provided on each floor.

First floor to have matron's office so placed as to oversee the single entrance and access to sleeping quarters; to have reception parlors or alcoves (one for every 20 women), or large parlor with furniture arranged for privacy in conversation; also assembly hall with movable partitions and set stage.

Kitchenette, sitting room, and sewing room to be provided on at least alternate room floors. Matron's quarters, physician's room, and infirmary, laundry in which lodgers can wash their clothes, and trunk room to be provided.

Hotel (type 7) also to have dining room and cafeteria, with outside access thereto, with pantry, service rooms, kitchen and toilet facilities for employees. An additional toilet room is to be provided conveniently accessible.

9. *Rooms, Size of.* Single bedrooms to have an area of 70 square feet and be 7 feet wide minimum.

10. *Ventilation.* Bedroom doors preferably to be placed opposite each other, and to have transoms or slat panels.

11. *Windows.* One window in each room to have minimum area of 12 square feet between stop beads.

V. SPECIAL PROVISIONS FOR TYPE 8.

Type 8. Tenement house (including flats or apartments), a building occupied in whole or in part by three or more families.

Tenement and apartment houses are considered generally undesirable and will be accepted only in cities where, because of high land values, it is clearly demonstrated that single and two-family houses can not be economically provided, or where there is insistent local demand for this type of multiple housing. In any case, they will be accepted only where the Bureau of Industrial Housing and Transportation is convinced that local conditions require or justify their use. They must conform in general to local building ordinances, to the general provisions of these standards, and to other special provisions to be issued by the Bureau of Industrial Housing and Transportation.

1. *Arrangement.* Buildings are not to be more than 2 rooms deep. This means either that rooms shall open on a street or on a rear yard, or on an interior park sufficiently large for grass and trees to grow in it and of a sufficient size to admit direct sunshine into all rooms opening on it, at some period of the day, except rooms with northerly exposure. Buildings not to be over four stories high.

2. *Cellar.* To be under whole building, minimum height, 7 feet; to be well lighted, cross ventilated, and paved.

3. *Fireproofing.* If over 3 stories high, to be fire-resistive throughout; if over 2 stories high, a non-fireproof building, the area of which exceeds 3,000 square feet, to be divided by fire walls of brick, terra cotta, stone or concrete into area not exceeding approximately 3,000 square feet each. All openings in such walls to be provided with fireproof self-closing doors.

Adequate means of egress to be provided direct from each apartment to street or yard bv additional stairs, or by fire tower or stair fire escape (fire escape less desirable). All such additional means of egress to be remote from the main stairs and separated therefrom and from the other parts of the building by walls of brick, terra cotta, stone or concrete, with fireproof self-closing doors at all openings.

All stairs and stair halls to be fireproof and inclosed in walls of brick, terra cotta, stone or concrete, with fireproof self-closing doors at all openings.

Dumb-waiters and elevators will not be accepted in stair inclosure; they should be inclosed in fireproof shafts with fireproof doors, those of dumb-waiter to be self-inclosing. Inside cellar stairs to be inclosed with walls of brick, terra cotta, stone or concrete with self-closing fireproof doors

In a flat-roofed, non-fireproof tenement house containing more than 4 families, all stairs to extend to the roof, and to be provided with a bulkhead. If 4 families or less, scuttle with ladder is sufficient.

4. *Heating.* Normally central system.

5. *Material of Walls.* Walls to be of brick, terra cotta, stone or concrete.

6. *Plumbing.* Each apartment to be provided in the kitchen with set washtubs with covers, preferably two, rim 36 inches above floor.

Sink to be in kitchen, rim 36 inches above floor.

Water closet to be in well-lighted and ventilated compartment with window of 4½ square feet minimum area to outer air, and with impervious floor, not concrete.

Bathtub (shower is not sufficient).

Lavatory, preferably to be in bathroom.

Sufficient additional water closets to be provided in the cellar or basement for the accommodation of engineer.

7. *Rooms—Height of.* Minimum height 9 feet in the clear.

8. *Rooms—Number and Use of.* For higher-paid workers, five-room type preferred with parlor, large kitchen, 3 bedrooms and bathroom. Dining room and kitchenette may be provided in place of large kitchen. Four-room type to be provided sparingly for higher-paid workers. Six-room type, with 4 bedrooms, or 3 bedrooms and parlor convertible into fourth bedroom, suited for abnormally large families only, and should be provided sparingly; six-room type should normally have parlor, dining room, kitchen, 3 bedrooms and bathroom.

For lower-paid workers, four-room type desirable, with parlor, kitchen, 2 bedrooms, and bathroom. A few three-room tenements may be provided.

One-room and two-room apartments will not be accepted.

No apartment of over six rooms accepted.

9. *Rooms—Size of.* One large bedroom to be provided, size 9x11 to 12x14 feet.

Small bedrooms, minimum size 80 square feet; minimum width 7 feet.

Parlor, 10x12 to 12x14 feet.

Dining room, 9x11 to 12x14 feet.

Kitchen (where there is no separate dining room), 10x12 to 12x14 feet.

Kitchenette (only where there is a separate dining room), minimum width 6 feet; normal minimum area 70 square feet.

10. *Windows.* Each room to have at least one window opening directly to the outer air, to be not less than 12 square feet in area between stop beads. Each public hall and stair hall to have window with minimum area of 12 square feet, opening directly to the outer air, at each story.

VI. Special Provisions for Type 9 (Boarding House).

Where more than 3 and less than 25 rooms for lodgers are provided, building to be classed as boarding house. If 3 lodgers or less, building to be classed as Type 3; if 25 or more to be classed as Types 4, 5, 6 or 7.

In addition to complying with all general provisions, buildings of type 9 must comply with the following special provisions:

1. *Access.* Lodgers to have access to their bedrooms and to their watercloset compartments and bathrooms without going through rooms designed for use of family. Separate outside entrance for lodgers recommended.

2. *Arrangement.* Not to be over 3 stories high. Not to be over 2 rooms deep, except that the end houses of rows may be 3 rooms deep.

3. *Cellar.* To be well lighted, cross-ventilated, dry and paved or cemented. Minimum clear height under joists 7 feet. Cellar not essential under whole house; where omitted, house to be set up on masonry piers or walls 2 feet clear from ground; space to be drained, inclosed and ventilated.

4. *Fire Protection.* If frame, not to be over 2 stories high. If over 2 stories high, adequate means of egress to be provided to street or yard by an additional flight of stairs, or by fire tower or stair fire escape (fire escape less desirable). All such additional means of egress to be remote from the main stairs and separated therefrom and from the other parts of the building by walls of brick, terra cotta, stone or concrete, with fireproof self-closing doors at all openings. Such additional means of egress to be so located that no room shall be more than 40 feet from a means of egress.

All stairs and stair halls to be not less than 3 feet wide in the clear and to be inclosed in walls of brick, terra cotta, stone or concrete with fireproof self-closing doors at all openings.

Dumb-waiters and elevators will not be accepted in stair inclosure; they should be inclosed in fireproof shafts with fireproof doors, those for dumb-waiters to be self-closing.

5. *Heating.* Except where connected with a central plant, provision to be made for independent heating.

6. *Materials of Walls.* Brick, terra cotta, stone or concrete preferred, but wood frame, clapboarded, shingled or stuccoed permitted for detached or semi-detached houses not over 2 stories high.

7. *Plumbing.* For family living quarters:

Bathtub (shower is not sufficient).

Lavatory, to be preferably in bathroom.

Sink to be in kitchen; rim 36 inches above floor.

Washtubs with covers, preferably two, rim 36 inches above floor, to be set in kitchen or in well-lighted, dry, and ventilated cellar.

Water-closet to be inside the house in well-lighted and ventilated compartment, with window of 4½ square feet minimum area to outer air, and preferably with impervious floor not of concrete.

A watercloset compartment containing lavatory to be provided for the sole use of the lodgers. The following minimum provisions to be made: For men, 1 bathtub per 24 lodgers, 1 water closet and 1 lavatory per 8 lodgers, 1 shower per 10 lodgers; for women, 1 bathtub per 16 lodgers, 1 body shower per 10 lodgers, 1 lavatory per 5 lodgers, 1 water closet per 8 lodgers. Dwarf partition between lavatories for women to extend at least 6 feet above the floor and have curtains.

In addition to above, floor and base of toilet rooms to be waterproof not of concrete.

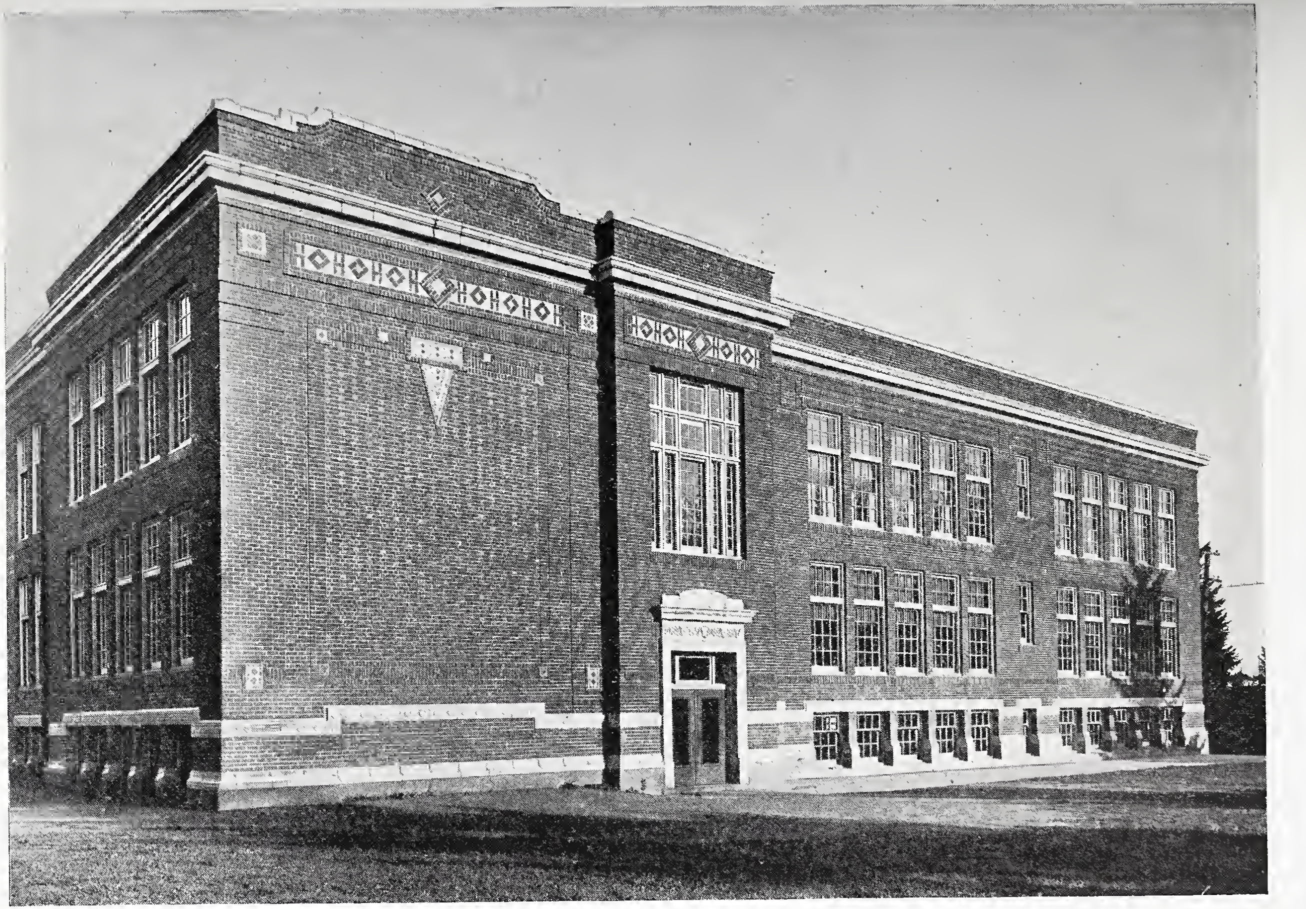
8. *Rooms, Height of.* Minumum 8 feet.

9. *Rooms in Attic.* No lodgers' rooms in attic accepted.

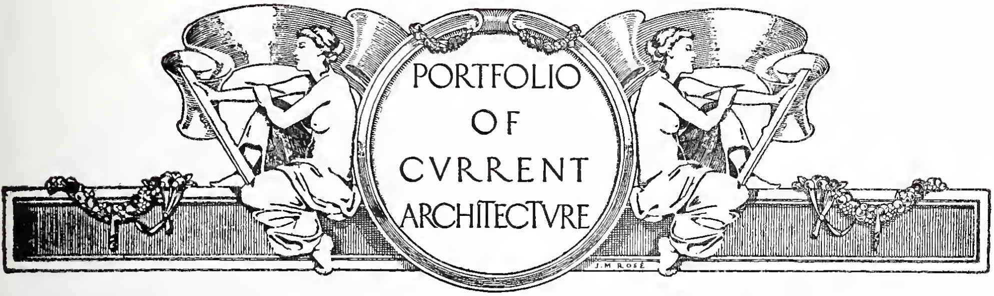
10. *Rooms, Number and Use of.* Each lodger to have separate room. Rooms for two lodgers not permitted. (Cubicles and dwarf partitions will not be accepted). Building to contain more than 3 and less than 25 rooms for lodgers, in addition to living quarters for one family, lodgers' bath rooms and toilet rooms containing showers, tubs, lavatories, waterclosets to be provided; preferably, bath room containing showers, tub, and lavatories to be separate but adjoining and communicating with water closet compartment. One of each such rooms preferably on each floor. Each of these two rooms to have windows opening directly to the outer air. Lodgers to have a common room, also dining room; the latter to be located near family kitchen; the common room to be conveniently accessible from the outside.

11. *Rooms, Size of.* Single bedrooms for lodgers to have an area of 70 square feet and be 7 feet wide minimum. Size of common room and dining room each to be proportionate to the number of boarders.

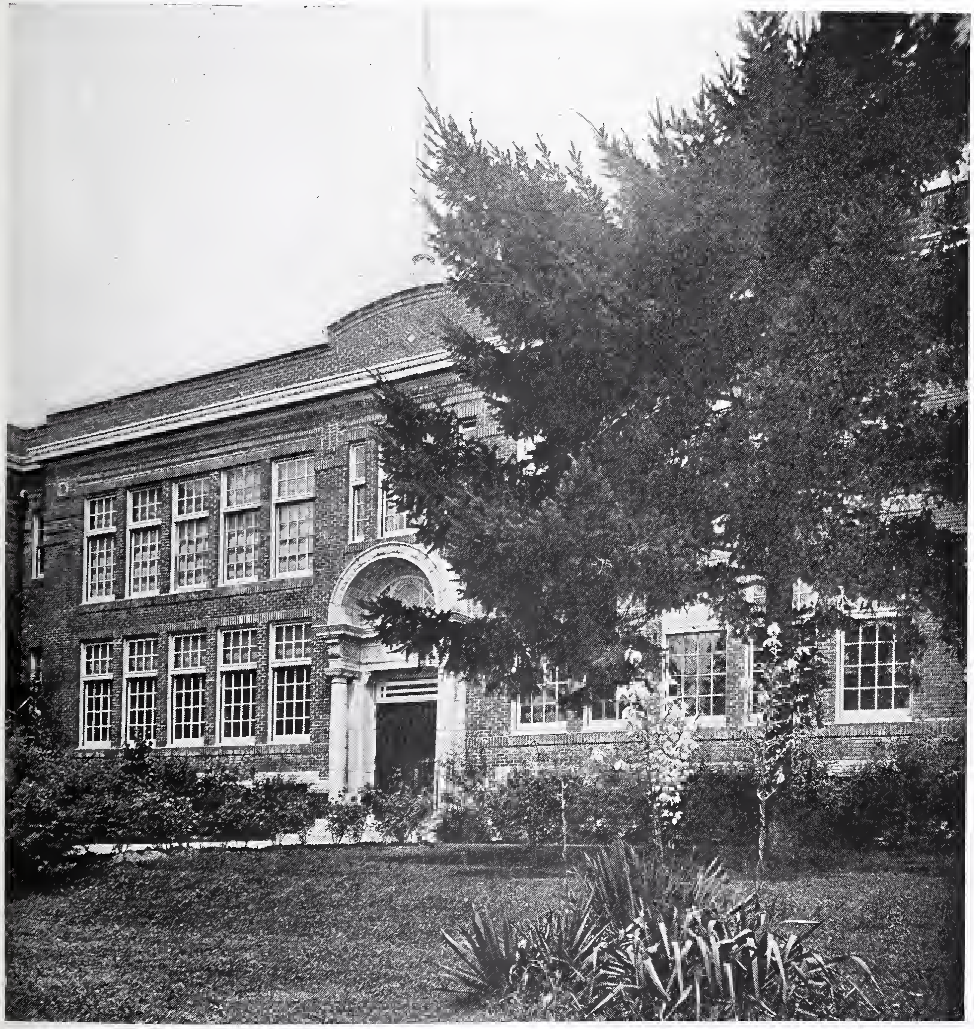
12. *Ventilation.* Bedroom doors preferably to be placed opposite each other and to have transoms or slat panels.



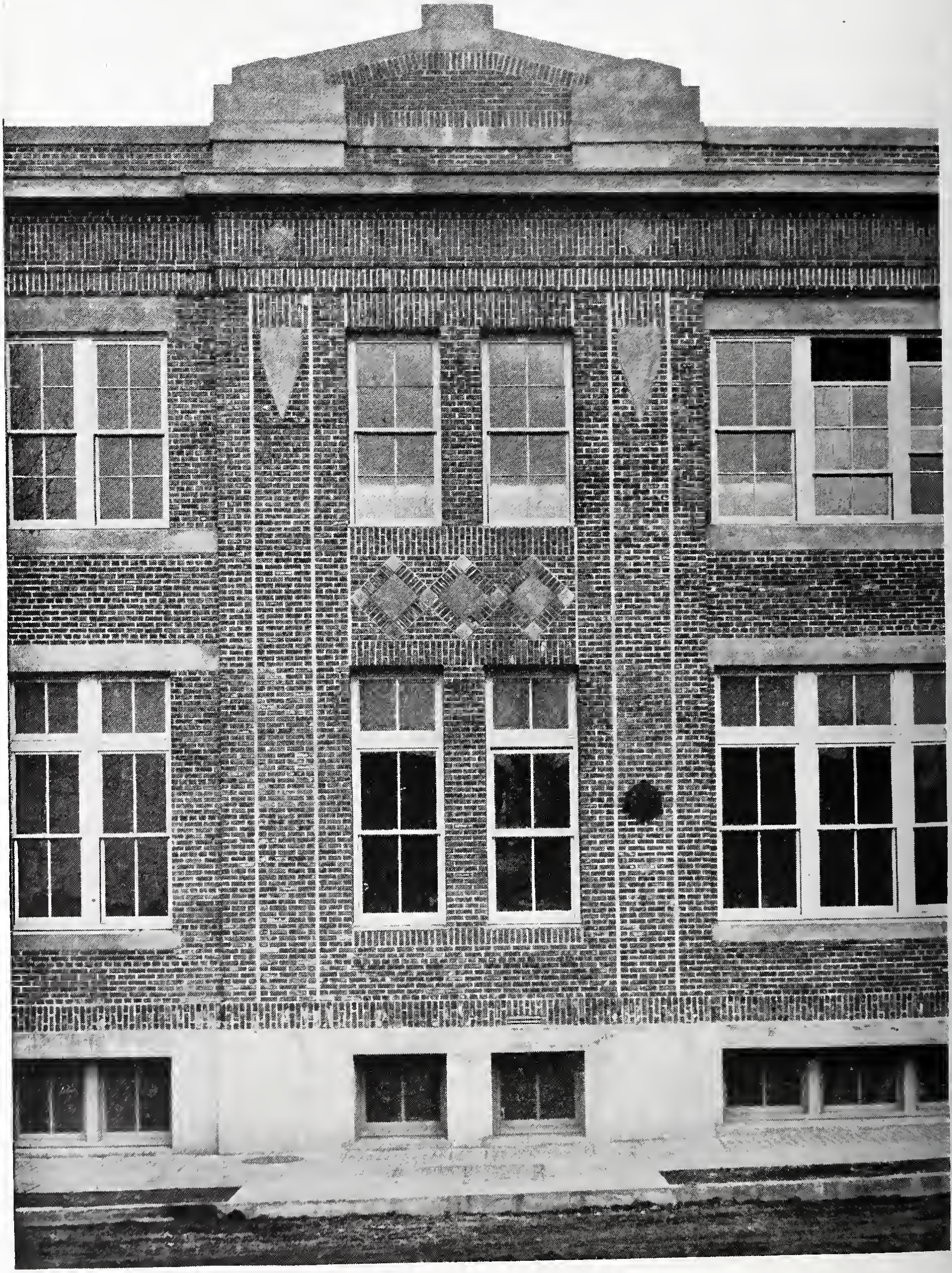
FERNWOOD GRAMMAR SCHOOL, PORTLAND,
OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



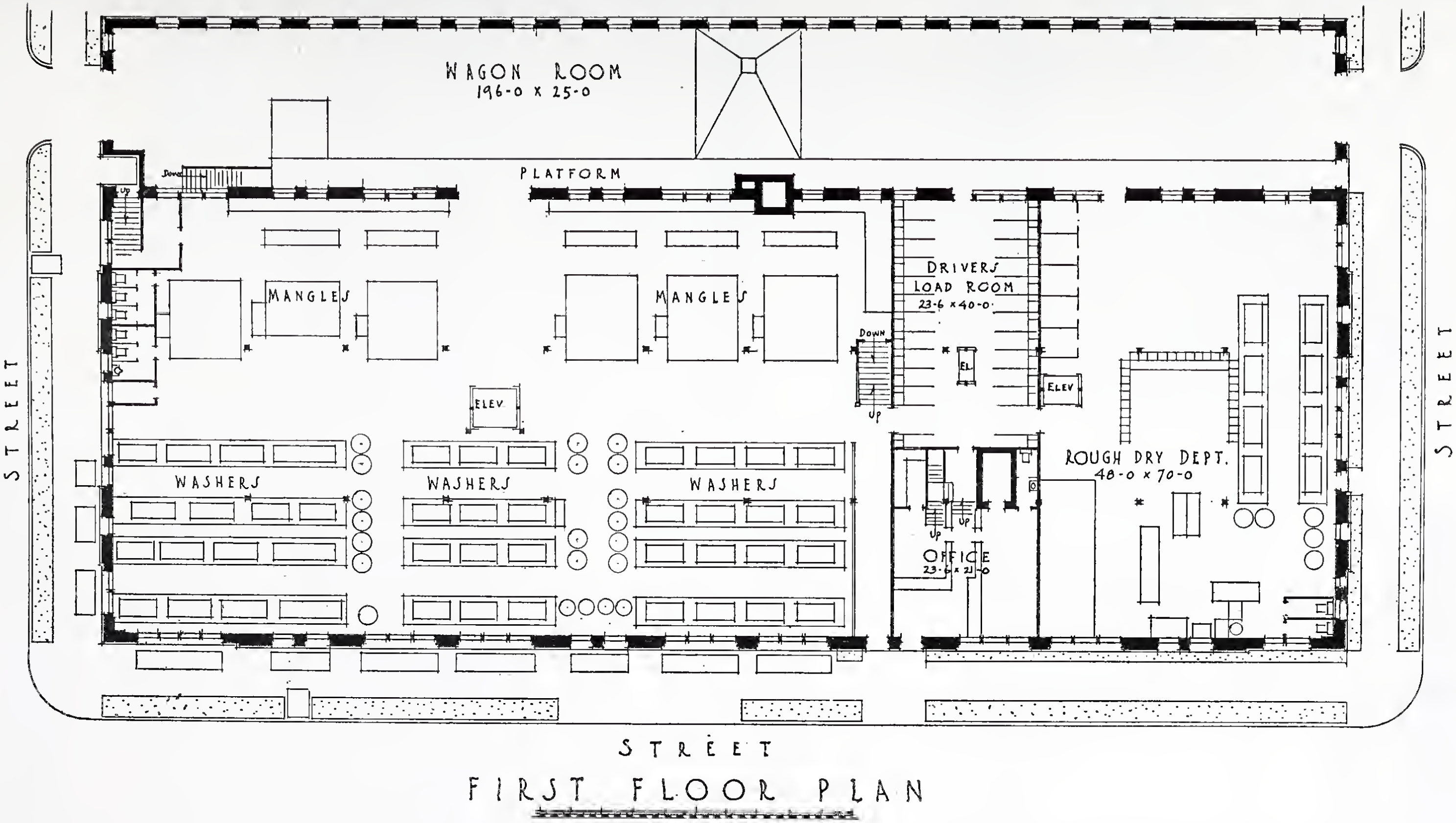
PORTFOLIO OF CURRENT ARCHITECTURE



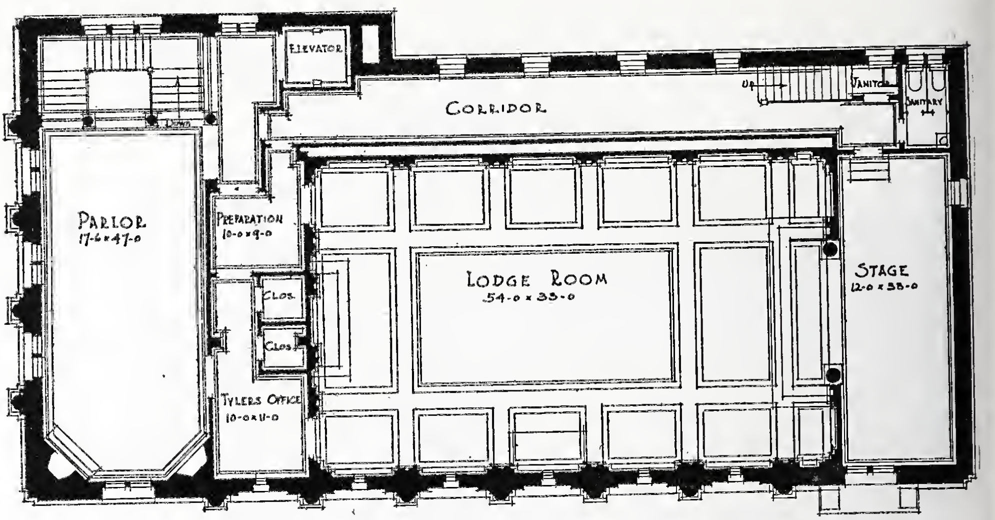
FERNWOOD GRAMMAR SCHOOL, PORTLAND, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



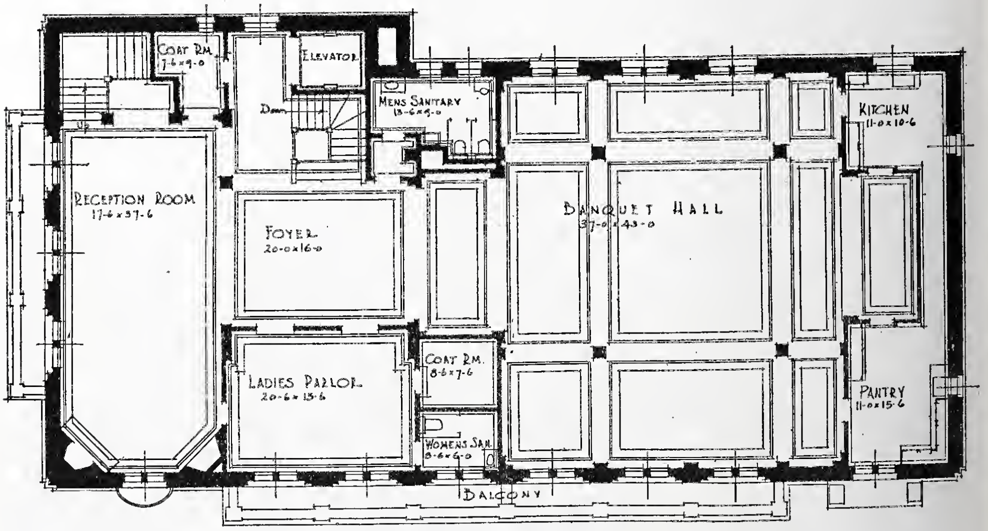
TROY LAUNDRY, PORTLAND, OREGON.
LAWRENCE & HOLFORD, ARCHITECTS.



FIRST FLOOR PLAN—TROY LAUNDRY, PORTLAND, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.

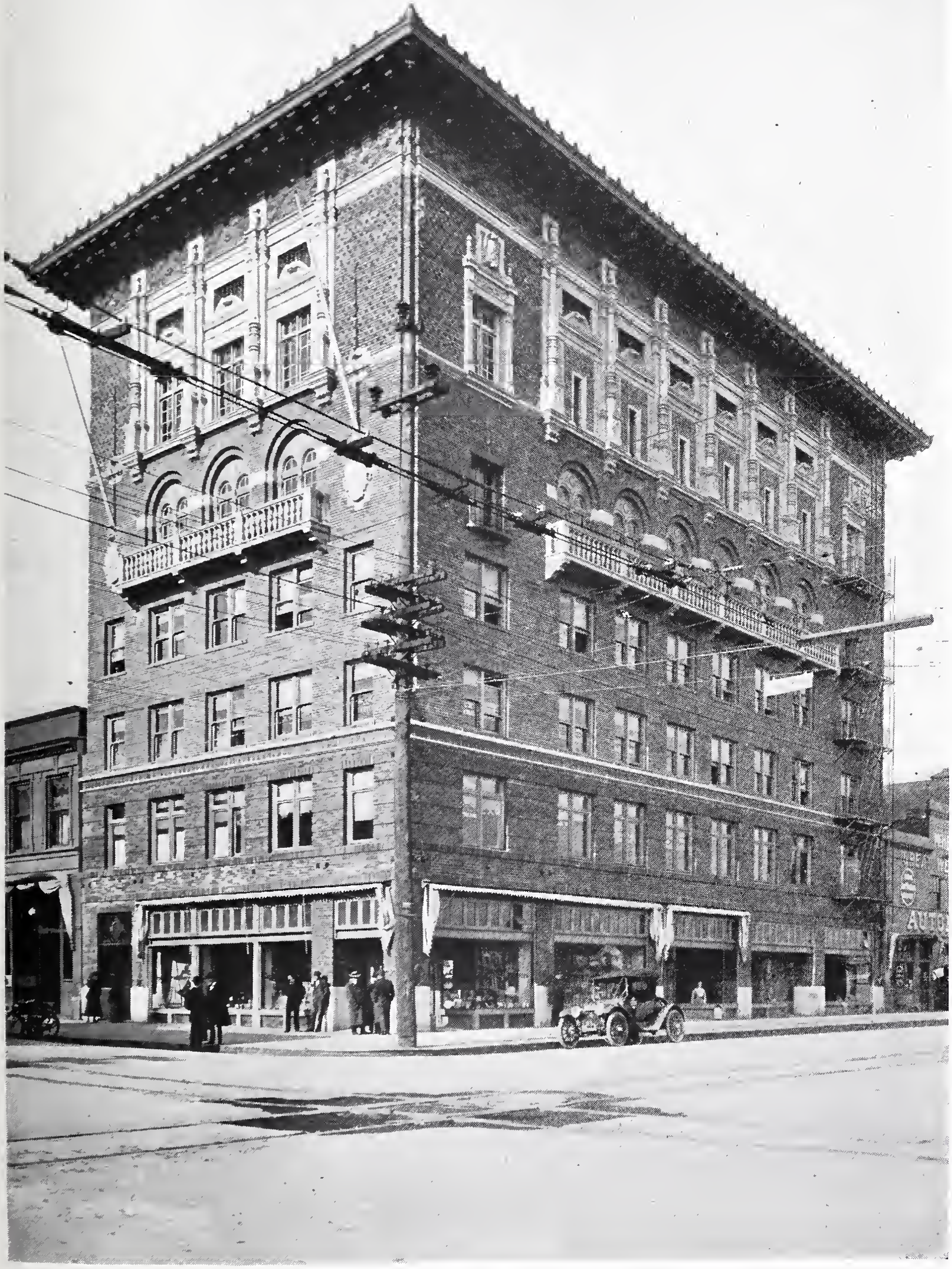


PLAN OF SIXTH FLOOR

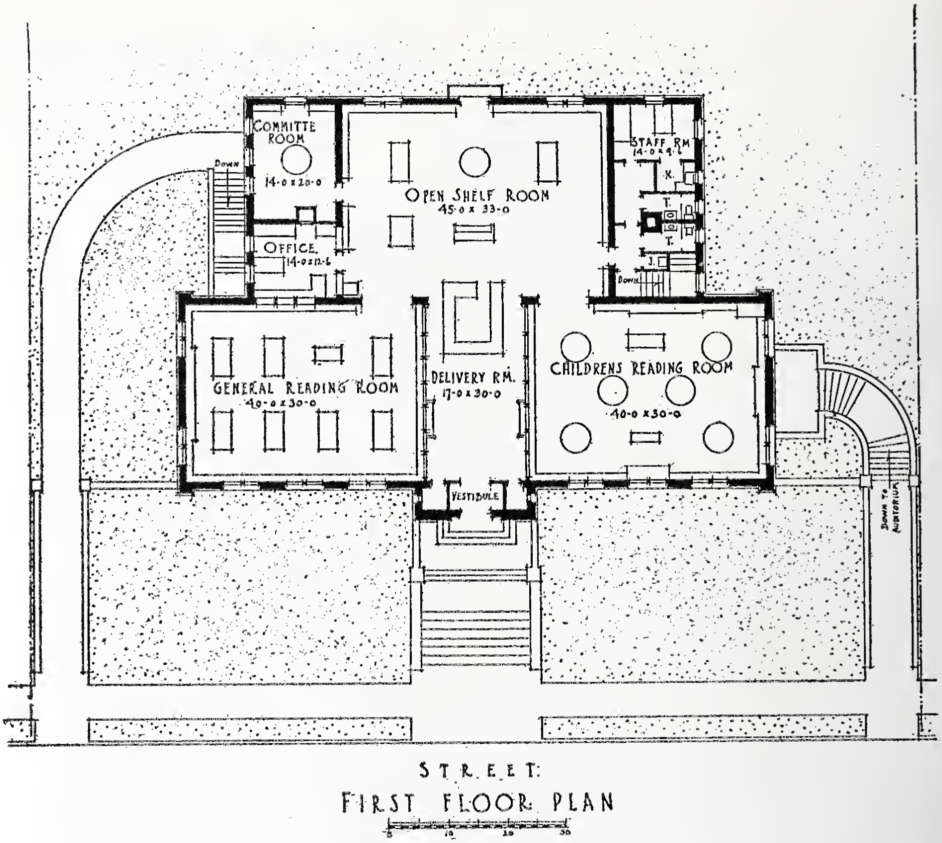


·PLAN OF FIFTH FLOOR·

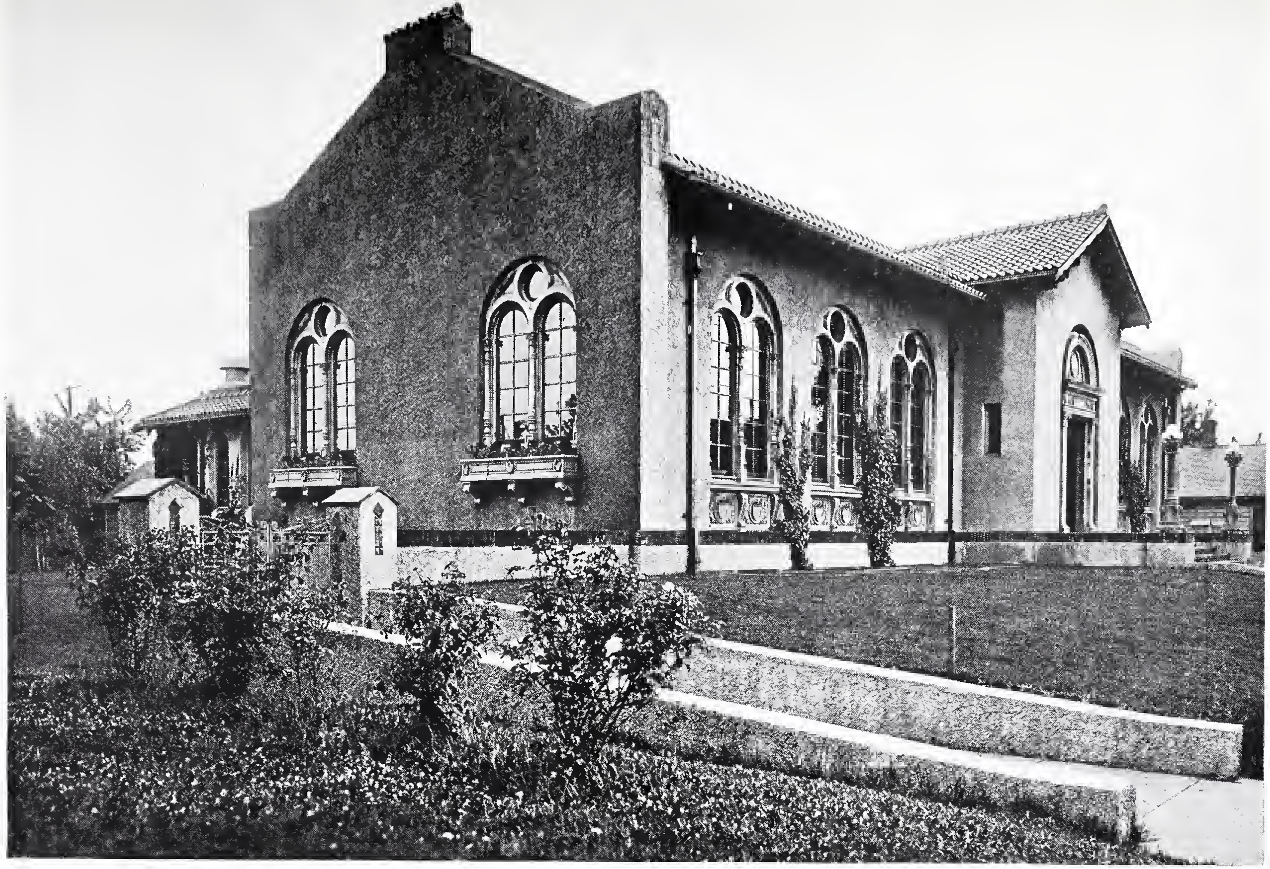
FIFTH AND SIXTH FLOOR PLANS—MASONIC TEMPLE BUILDING, SALEM, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



MASONIC TEMPLE BUILDING, SALEM, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



FIRST FLOOR PLAN—ALBINA BRANCH OF THE PORTLAND PUBLIC LIBRARY, PORTLAND, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



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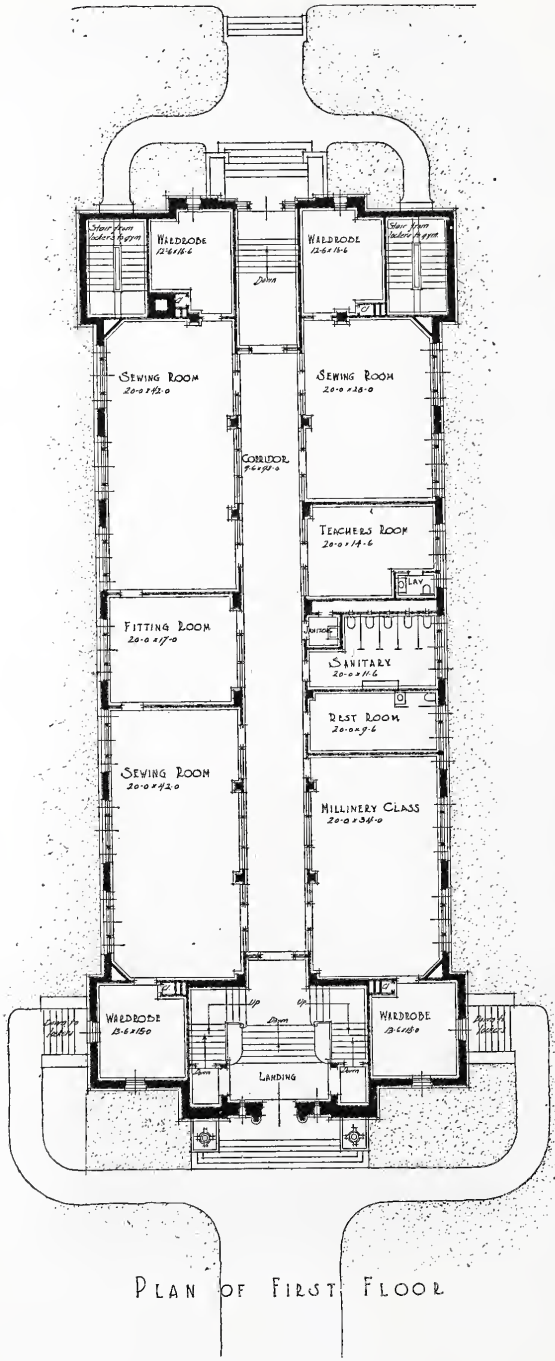
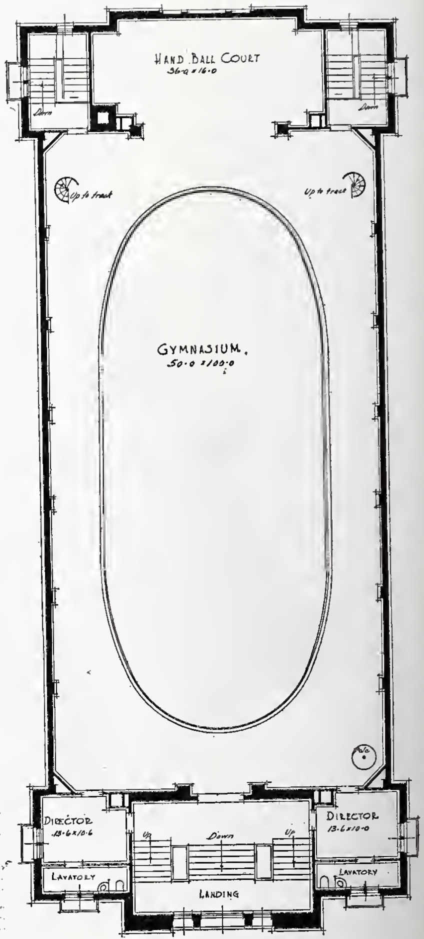
LAWRENCE & HOLFORD, ARCHITECTS.

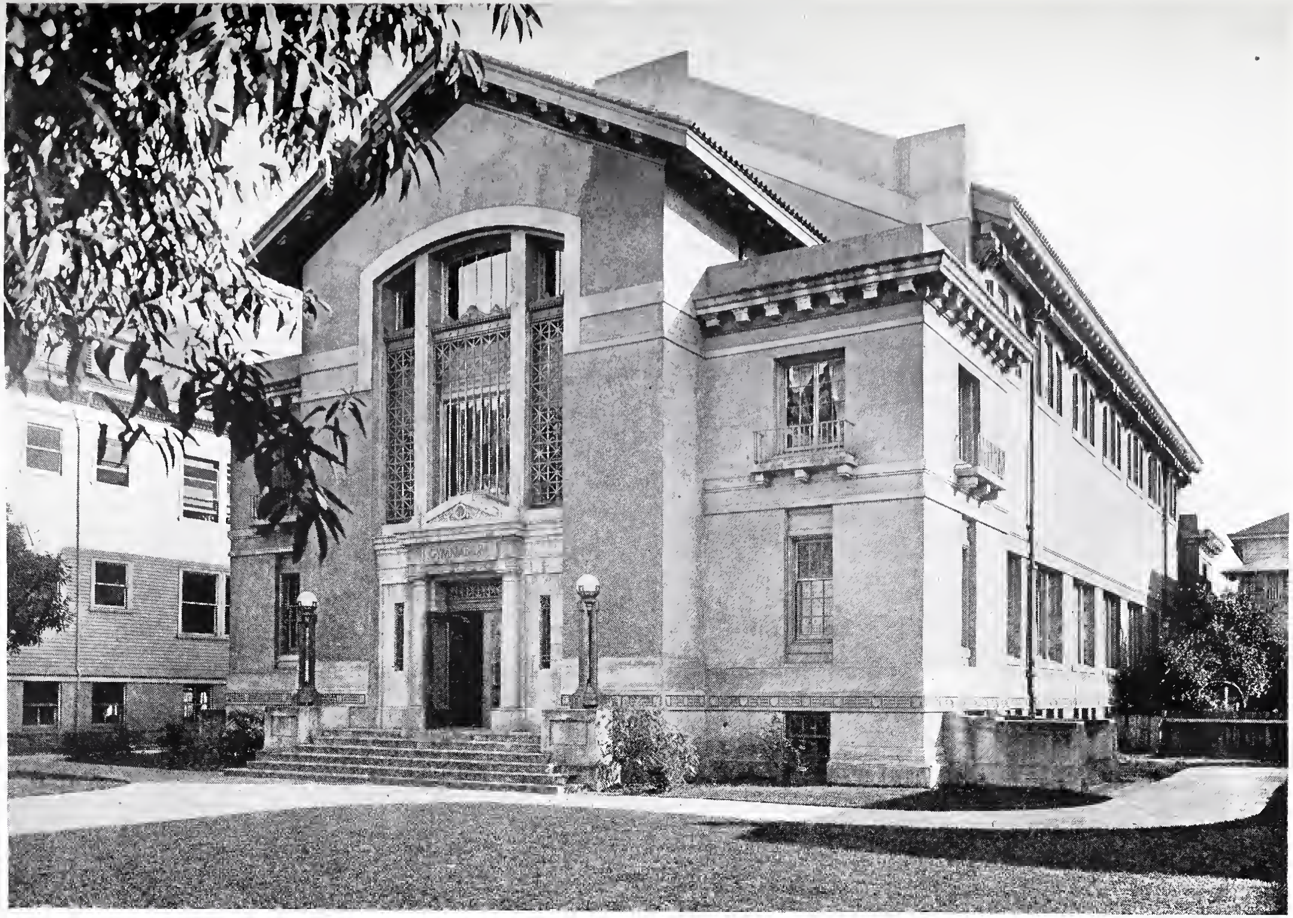


PLAN OF FIRST FLOOR

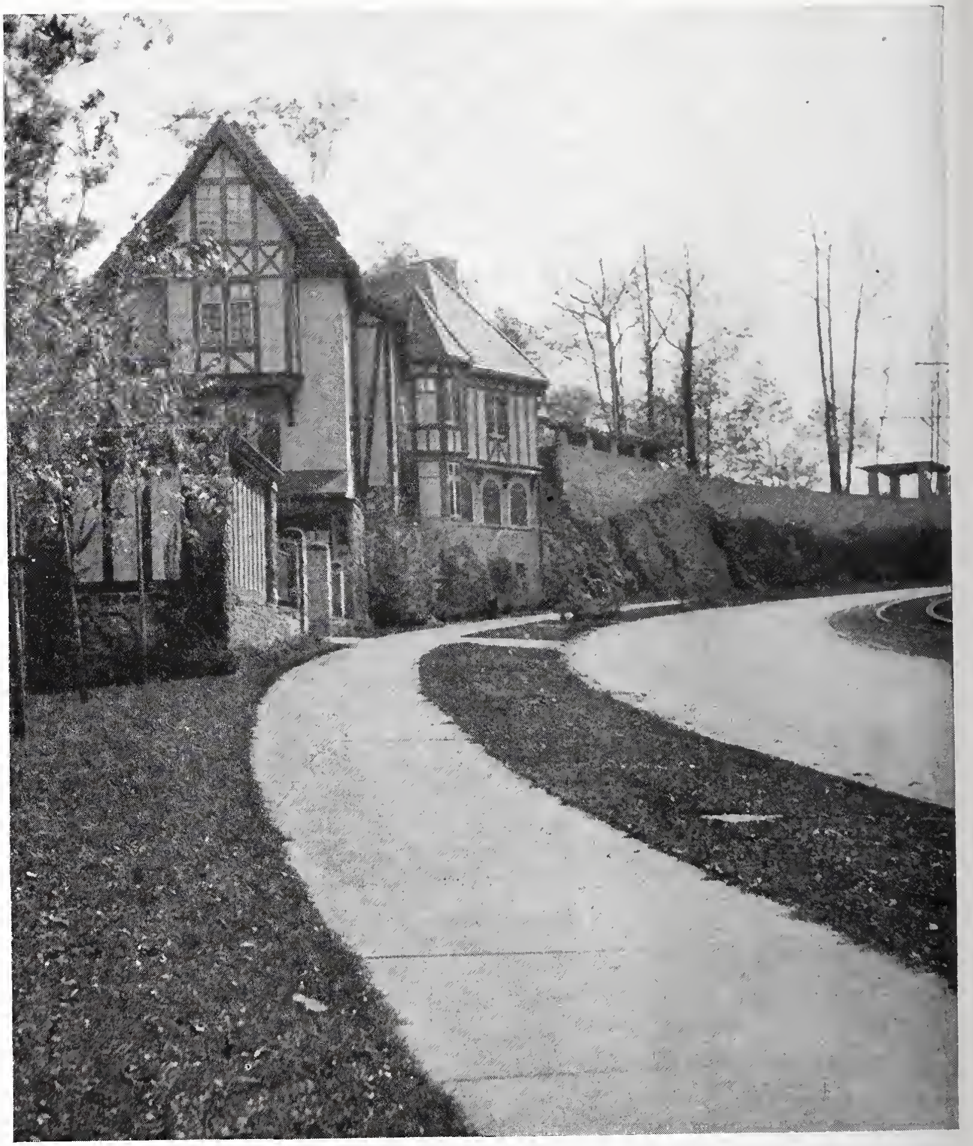


PLAN OF SECOND FLOOR

WASHINGTON HIGH SCHOOL GYMNASIUM AND DOMESTIC SCIENCE BUILDING, PORTLAND, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



WASHINGTON HIGH SCHOOL GYMNASIUM AND DOMESTIC SCIENCE BUILDING, PORTLAND, OREGON. LAWRENCE & HOLFORD, ARCHITECTS.



EUCLID GOLF ALLOTMENT, CLEVELAND, OHIO.

Suburban Landscape Planning in Cleveland

By I. T. Frary

THERE is a constantly increasing tendency on the part of city dwellers to rebel against the uninteresting and monotonous regularity of gridiron street planning. The economy of space, while unquestionably desirable from an economic standpoint, is equally undesirable from the esthetic. The whole trend of city life at best is to mold us into uniform types, and the endless repetition of cast-in-a-mold streets and houses only emphasizes the tendency toward loss of individuality. Fortunately, however, there is every evidence of a strong and rapidly growing aversion to this sort of environment, and the suburban development of many of our large cities is showing most encouraging signs of progress along the lines of park rather than gridiron planning.

A large proportion of real estate development seems to be, unfortunately, in the hands of promoters whose vision does not extend beyond the realm of dividends; and, as a result, we are all familiar with the painful but profitable districts, which might have been attractive, homelike neighborhoods, but which, instead, have been cut up into lots of minimum size, outraged with houses of minimum cost and artistic merit, and then sold to innocent people, who are thereby doomed to a minimum opportunity for developing individuality in either themselves or their surroundings. In the remote past, exigencies of mutual defence and transportation necessitated compact housing of the population; but with the present day social conditions, and with the advent of electric cars, suburban railway service and automobiles, this necessity has been removed.

Already many progressive citizens have emancipated themselves from city life and have transplanted themselves and their families bodily into the country, for the summer at least. Their less fortunately circumstanced neighbors have watched this exodus enviously and, in an endeavor to make the best of their fate, have taken up the task of securing, in or near the city, as much of rural charm as possible.

Realizing the force of this movement,

SHAKER HEIGHTS.

which is everywhere in evidence, men of vision have broken the bonds of tradition and have developed suburban and even urban properties along natural, artistic lines, so that, instead of destroying all natural beauty by so-called "modern improvements" and making the progress of city expansion a blight, they are preserving and enhancing such charm, converting waste spaces into beauty spots, and, by the judicious preservation of natural lakes, ravines, patches of woodland and other attractive bits of landscape, they not only are contributing to the beauty of adjacent property, but are actually increasing its value, thus more than compensating themselves for the loss of tracts withdrawn from sale.

The city of Cleveland is an interesting example of a determined campaign to redeem, as far as possible, the beauties which a past generation did its best to destroy, and to preserve that which the "devouring hand of progress" has overlooked.

Located as it is on the south shore of Lake Erie, a wonderful opportunity was presented for riparian development; but as is customarily the case, the appreciation of esthetic possibilities came too late and, as a result, much of its most beautiful lake front is now in the clutches of railroads and factories. Of late years, however, a wholesome public spirit has been awakened, and considerable tracts of lake front and other property have been secured for park purposes and a broad policy of park extension has been established, which has already developed 2,180 acres of park property (valued at $30,000,000), and aims to surround the city eventually with a chain of parks and boulevards. This development has been fostered largely by men interested in real estate, and it is to their breadth of vision and grasp of the city's esthetic possibilities that much of its present beauty is due.

The residential expansion to the north being sharply restricted by the waters of Lake Erie and to the south by the industrial district, the city has of necessity spread with great rapidity to the east and west. Including the suburbs (which, though politically separate, are practically a part of the city) it stretches along the lake shore for a distance of about fifteen miles.

The older portions of the city are laid out largely on the gridiron plan, or as near it as conditions would permit; but within the past decade or two several extensive, outlying tracts have been developed in such a manner as to merit more than passing notice.

Of these, the territory covering the

SHAKER HEIGHTS.

SHAKER HEIGHTS, CLEVELAND, OHIO.

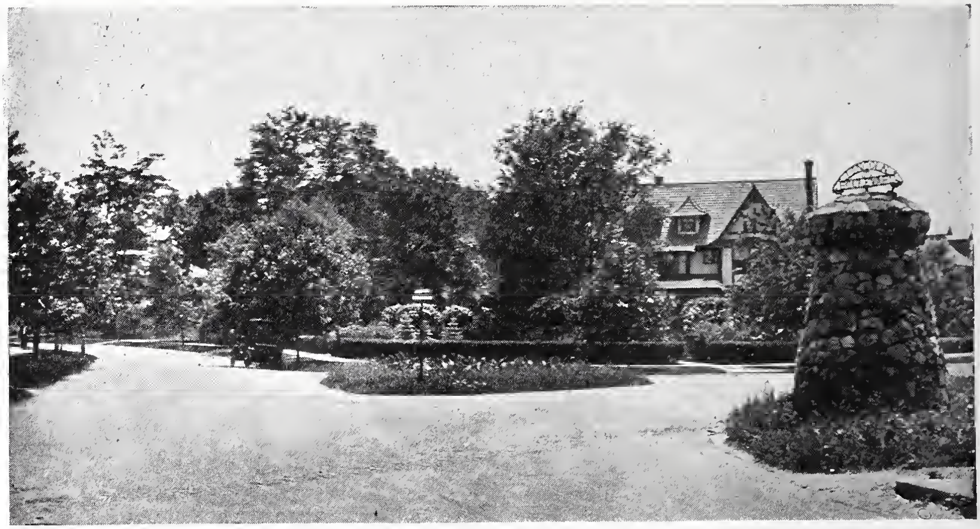
heights which fringe the eastern edge of the city stands preeminent because of its great extent, its natural beauty and the intelligent, comprehensive plans which have carefully retained and enhanced so much of its original character. A large portion of the property in question was bought in the year 1826 by the United Society of Believers, or Shakers, as they were commonly called because of a shaking or dancing movement which was part of their religious service. This peculiar sect, in whose life marriage had no place and which held all property in common, operated its own sawmill, grist mill, broom factory and tannery, as well as cultivating its extensive farm lands, and to a large degree lived its life independent and aloof from the surrounding world. Marriage being forbidden, the existence of the community depended upon converts from the outside world; and as they were not aggressive proselyters, the membership gradually dwindled to a mere handful of aged people, and in course of time the survivors joined a stronger community located in the east, and the property, embracing 1,393 acres, was sold to a syndicate in 1892.

The men in whose hands was placed the development of this great tract were fortunately men of vision and taste, who appreciated the picturesque as well as the commercial value of their property, which consisted of cultivated fields, orchards, woodland and a chain of small lakes. Under their direction the engineer's plans were drawn so that the beauty spots were carefully preserved, roads were laid out in conformity with the natural topography, lakes were enlarged and beautified, and in every way possible the charm of nature was preserved.

In pursuance of this policy, tracts aggregating three or four hundred acres were deeded outright to the city for park extension purposes and another large tract was given to a golf club, the only financial returns from these gifts being derived from the anticipated enhancement of values in the adjacent property.

It must not be thought that this striving for beautiful park-like effects resulted in cutting the district into an aimless hodgepodge by erratic winding drives; far from it. Indeed, a study of the plan will show that the greatest care was taken to provide arteries of traffic, which give direct service through the entire tract and to every section of it. Moreover, the apparently aimless meanderings of the roads are in reality nicely calculated, not only to preserve existing peculiarities of topography and secure the utmost beauty in curvature of roadway and charm of home sites, but also to secure the maximum of salable real estate and the most efficient intercommunication between all portions of this extensive and diversified territory.

SHAKER HEIGHTS, CLEVELAND, OHIO.



CLEVELAND HEIGHTS, CLEVELAND, OHIO.

Despite the beauty resulting from so irregular a layout, it must be confessed that, to a stranger endeavoring to find his way, it seems a hopeless tangle, and many a belated driver has, like a babe in the woods, traveled around and around in endless circles. The devotee of efficiency will of course find much to criticise in such a plan, for, so long as a straight line constitutes the shortest route of travel between two points, the graceful curve will be to him a source of irritation. For such minds Cleveland's suburbs would possess no charms. However, even though we do acknowledge that it is all as confusing to a stranger as the labyrinth of Hampton Court, we admire it just the same—for most of us do not build our homes to suit the convenience of strangers; we build them for our own use and convenience—and if our taste dictates a quiet secluded nook in an out of the way corner, that is our affair, and it is up to the delivery boy, the book agent or the bill collector to find us as best he can—that is his affair.

All property was hedged about with stringent restrictions regulating the character of houses to be erected, their relation to street and party lines, and excluding business blocks and other objectionable features. As this property was disposed of, other tracts were secured and laid out in conformity with the original plan until, today, there is embodied in the territory known as Shaker Heights an area of approximately 4,000 acres.

Closely adjoining this territory are several other districts in which the same general ideas of planning have been followed. The oldest and most important of these is Euclid Heights, though it is in no way comparable to the vast area of the Shaker territory. Ambler Heights, Cedar Heights, Cleveland Heights (which includes Mayfield Heights and Forest Hill) and the Euclid Golf Allotment are other divisions—all of which have been laid out with the same outstanding idea of giving an environment of beauty and individuality. So vast and comprehensive have been the plans in connection with this territory that the expansion of many years to come has been anticipated.

The altitude (in places over 400 feet above the lake level), atmospheric purity and freedom from any possibility of manufacturing and commercial aggression make of this entire heights territory an ideal location for a residential district, and it has the additional advantage, not found in many large cities, of being approached through streets of good character and not through slums or crowded commercial districts, as is so often the case.

EAST BOULEVARD, CLEVELAND, OHIO.

At the extreme western limits of the city and about equally distant from the business centre another but much smaller district has been developed which is known as Clifton Park. It is reached from the business centre by an almost unbroken stretch of boulevard and parkway skirting the lake shore. On this side of the city the shore is fringed most of the way by residences instead of by the factories which disfigure the eastern shore. This difference is due to the high bluffs, which make the water inaccessible, and have diverted the railroads with their accompanying factories to territory further inland.

The conditions at Clifton Park are radically different from those obtaining in the Shaker Heights district. Instead of the limitless rolling country awaiting future expansion, there is here a comparatively small area, the limits of which are sharply defined on the north and west by lofty bluffs which drop precipitately to the waters of the lake and of Rocky River, on the south by a railroad, and on the east by the regulation gridiron layout of Lakewood village. This property, which a generation ago was used as a picnic resort, is still thickly wooded with forest trees which have been carefully preserved.

In planning the roadways, first consideration was given to the extraordinary beauty and value of the lake and river frontage, for here the cliffs have an almost sheer drop of seventy-five feet to the water; and as the feature of this district is the beautiful view over lake and river, the choicest residences are naturally to be found along the cliff's edge. The main roadway, upon which these places face, practically encircles the property, enclosing an irregular tract, which is in turn cut through by other curving roads. Although the entire area of this tract is less than 200 acres, the winding roads and the heavy screen of trees, by cutting off continuous vistas in any direction, give an exaggerated impression of its extent. Within the confines of the city itself are to be found numerous interesting bits of landscape planning due to the irregular topography and to the parkways. These irregularities of topography, which have been carefully preserved by the Park Commission, have served as an inspiration to many owners of adjoining property, who, by harmonious development, have not only enhanced the value and attractiveness of their own holdings but have at the same time increased the apparent extent of the park areas.

The most important of these is known as the Wade Park Allotment and is located north and east of and adjoining Wade Park. It is an exclusive residential district, some of whose winding, well shaded roadways are but continuations of the park drives. This affords another illustration of the far-sighted

CLIFTON PARK, CLEVELAND, OHIO.

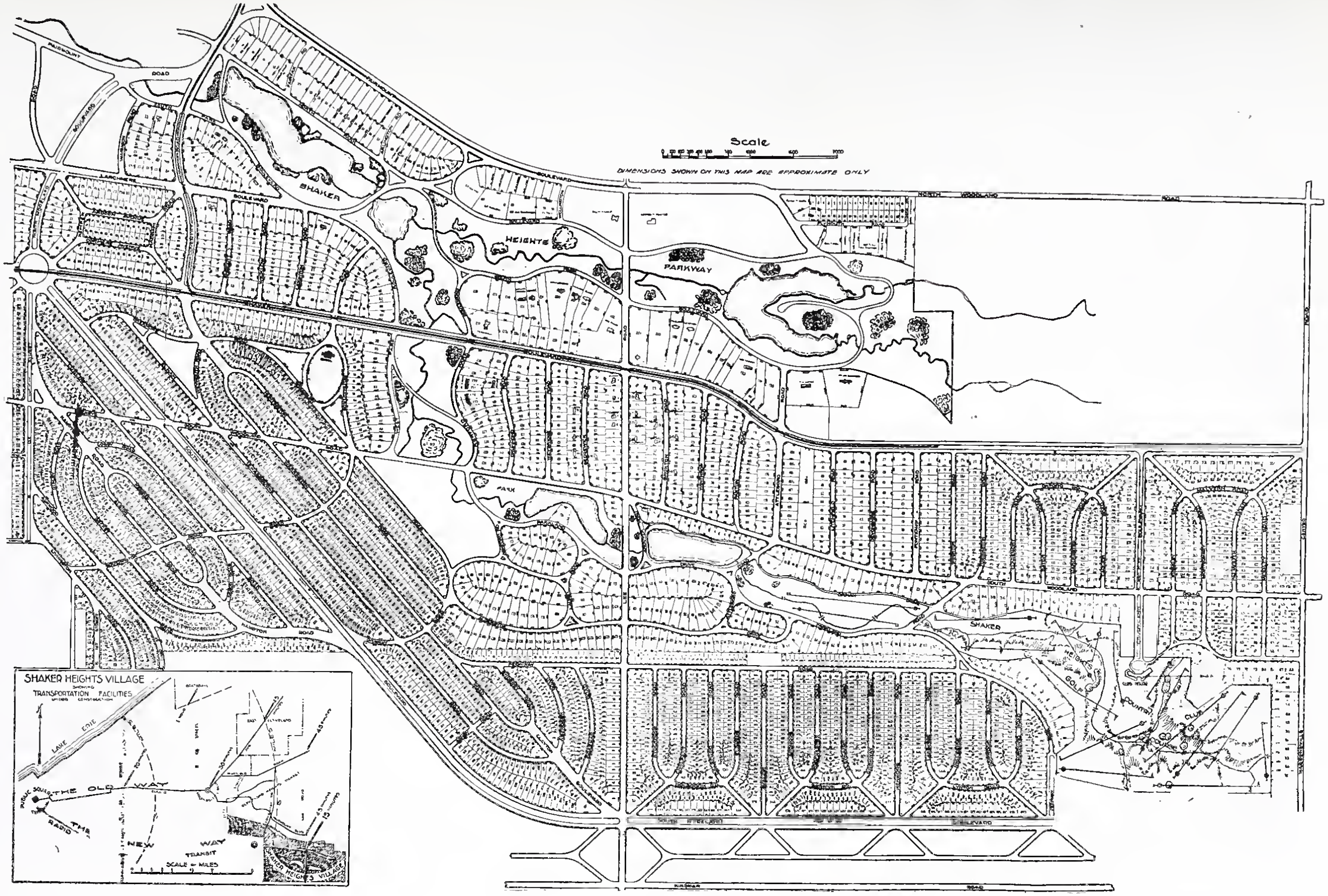
policy of turning over to the city valuable land for park purposes, and depending upon the enhancement of adjoining property as a means of reimbursement.

It might be noted in this connection that, owing to the jealous fear on the part of certain narrow-minded politicians, lest the donors reap vast profits, several other park sites of great value were lost to the city, and that this particular one was secured only because of the patience and public spirit of the donor. The Wade Park territory assumes added importance because of the educational and ecclesiastical institutions which now exist or are about to be located in its vicinity, reference to which was made in an article descriptive of the Cleveland Museum of Art, which appeared in the Architectural Record of September, 1916.

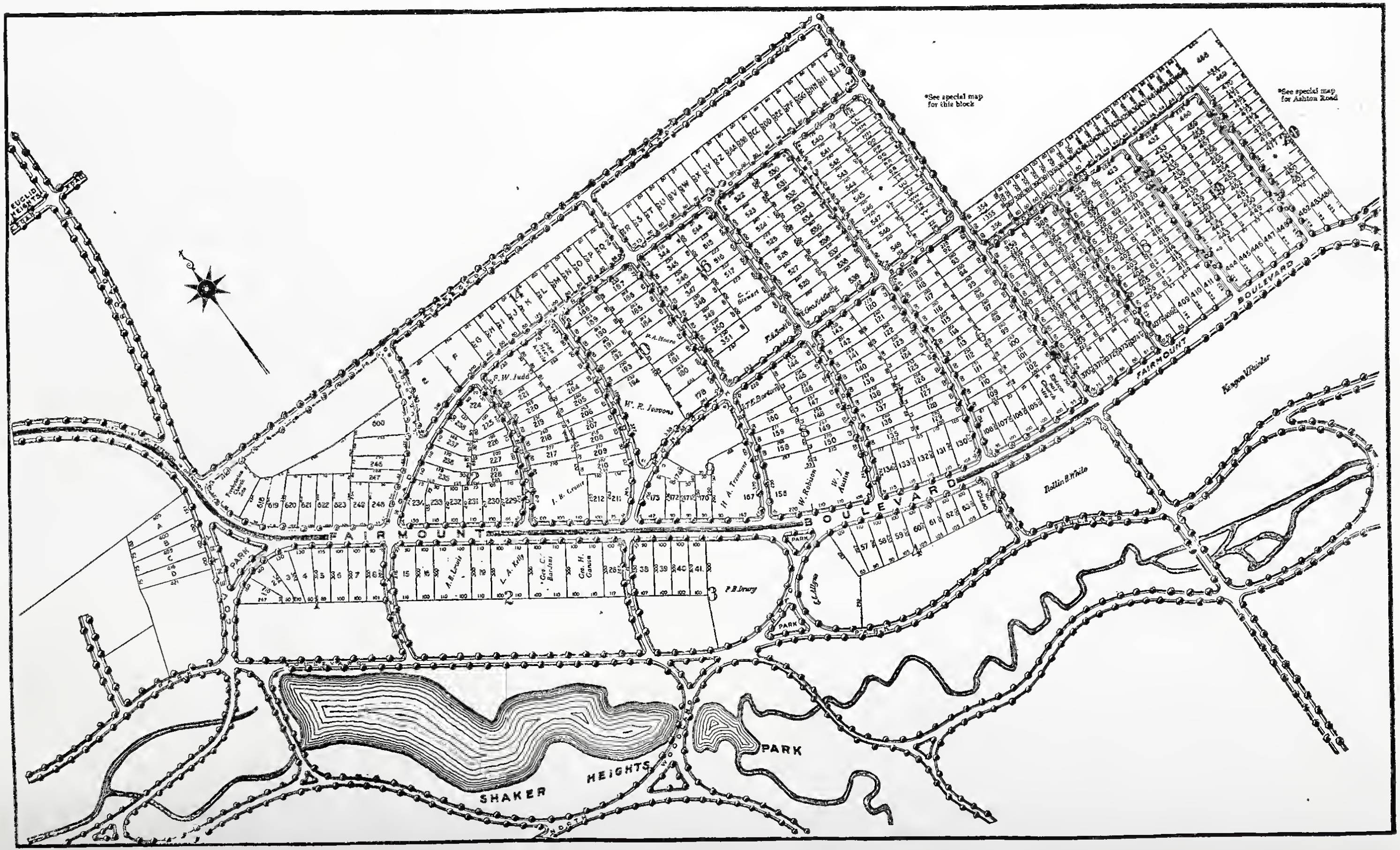
The photographs shown on these pages give the effect, in many instances, of park drives, but actually were taken in well built-up localities, and in the majority of instances, though apparently the edge of deep woodland, the heavy foliage is in reality but a screen concealing houses surrounded by well kept grounds.

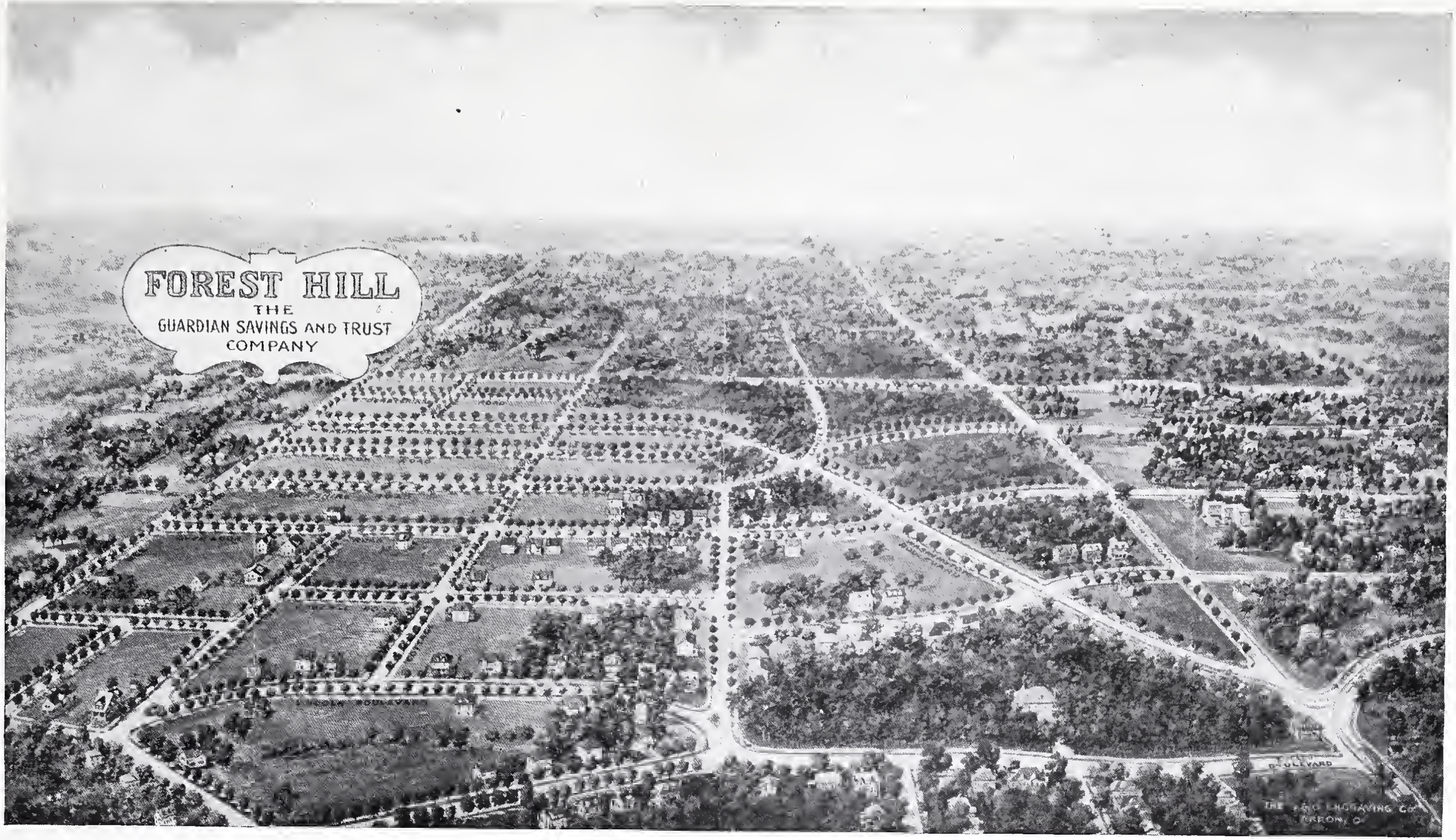
The artistic value of the park system of planning for real estate development is so obvious that it scarcely requires mention. The mental and moral value to the community, while less obvious, is unquestionable and might well be dwelt upon at length; and the financial value cannot be doubted even by the most conservative real estate dealer. In vindication of the claim that the public does want beauty, does want to live in a beautiful environment, and is willing to pay for it when it can be procured, the rapidity with which these districts are being built up offers most convincing proof. With the commercial growth of the city gradually encroaching upon former fashionable districts and necessitating the removal of their former occupants, it is most noticeable that, to a large extent, the houses of importance and character are being built in the districts which are not laid out upon gridiron lines, and the further the departure from the commonplace and the more picturesque its surroundings, the greater is the price which the prospective purchaser is willing to pay for a home site.

Looking back and contrasting this

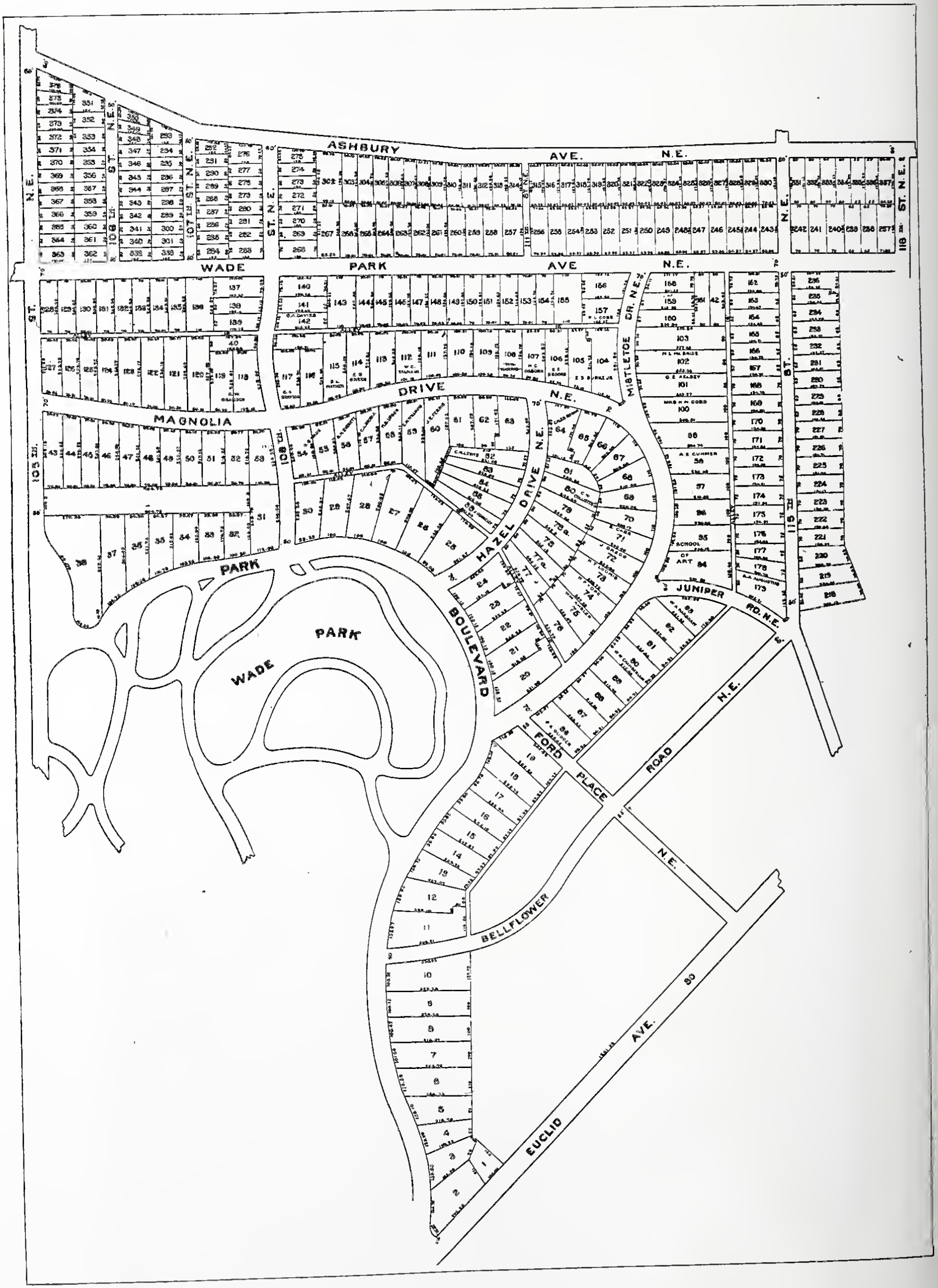


PLAN OF SHAKER HEIGHTS,
CLEVELAND, OHIO.

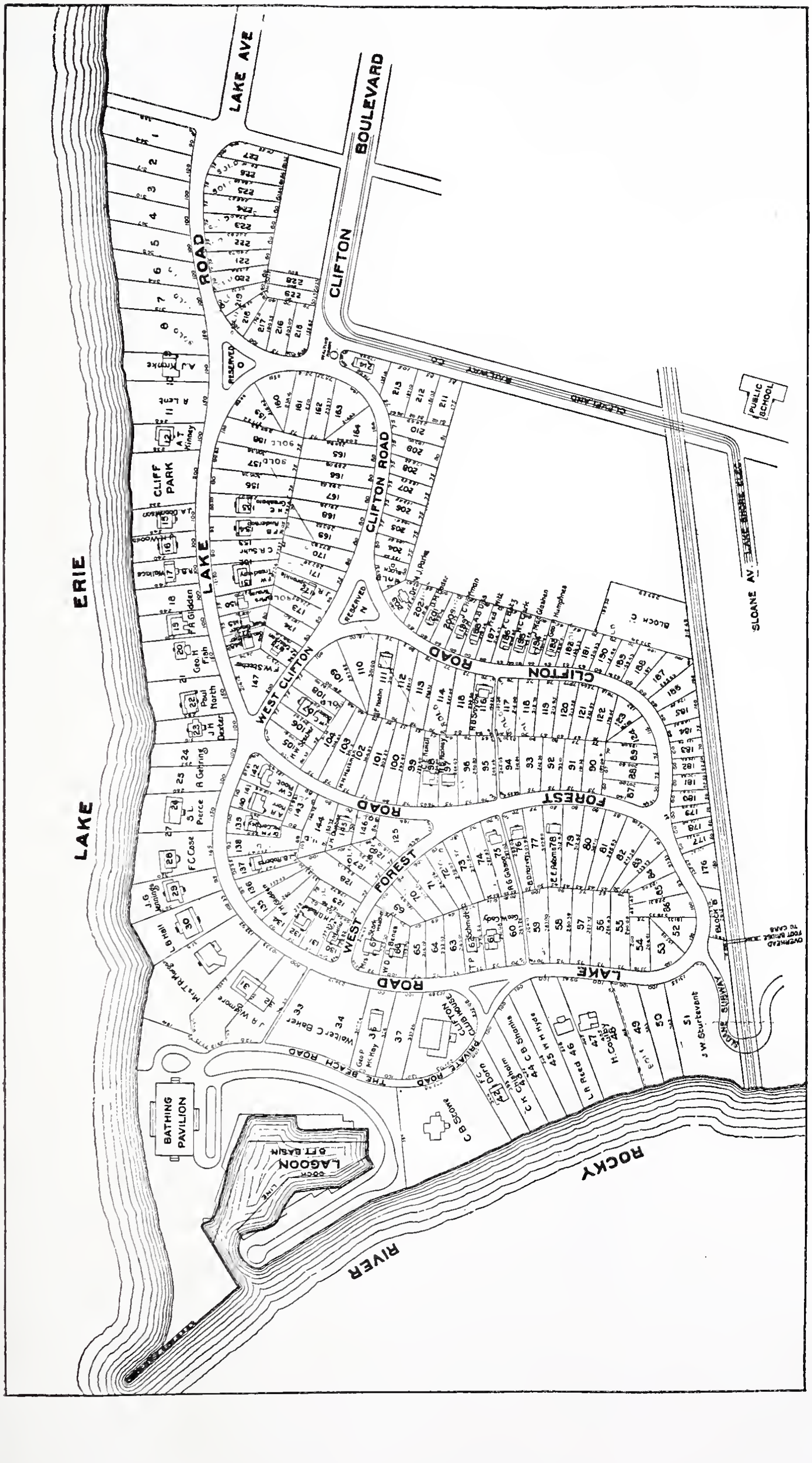




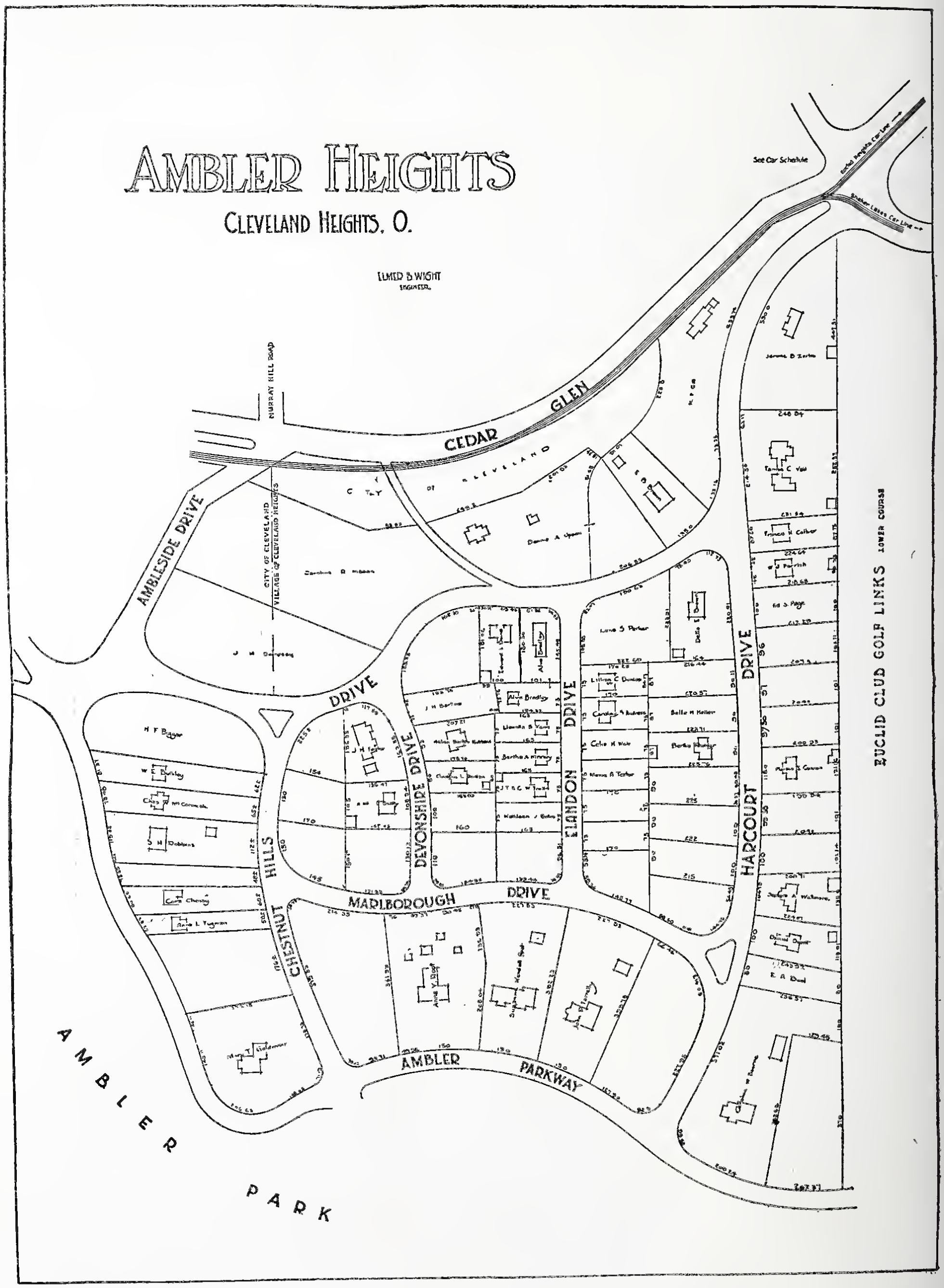
PLAN OF FOREST HILL,
CLEVELAND, OHIO.



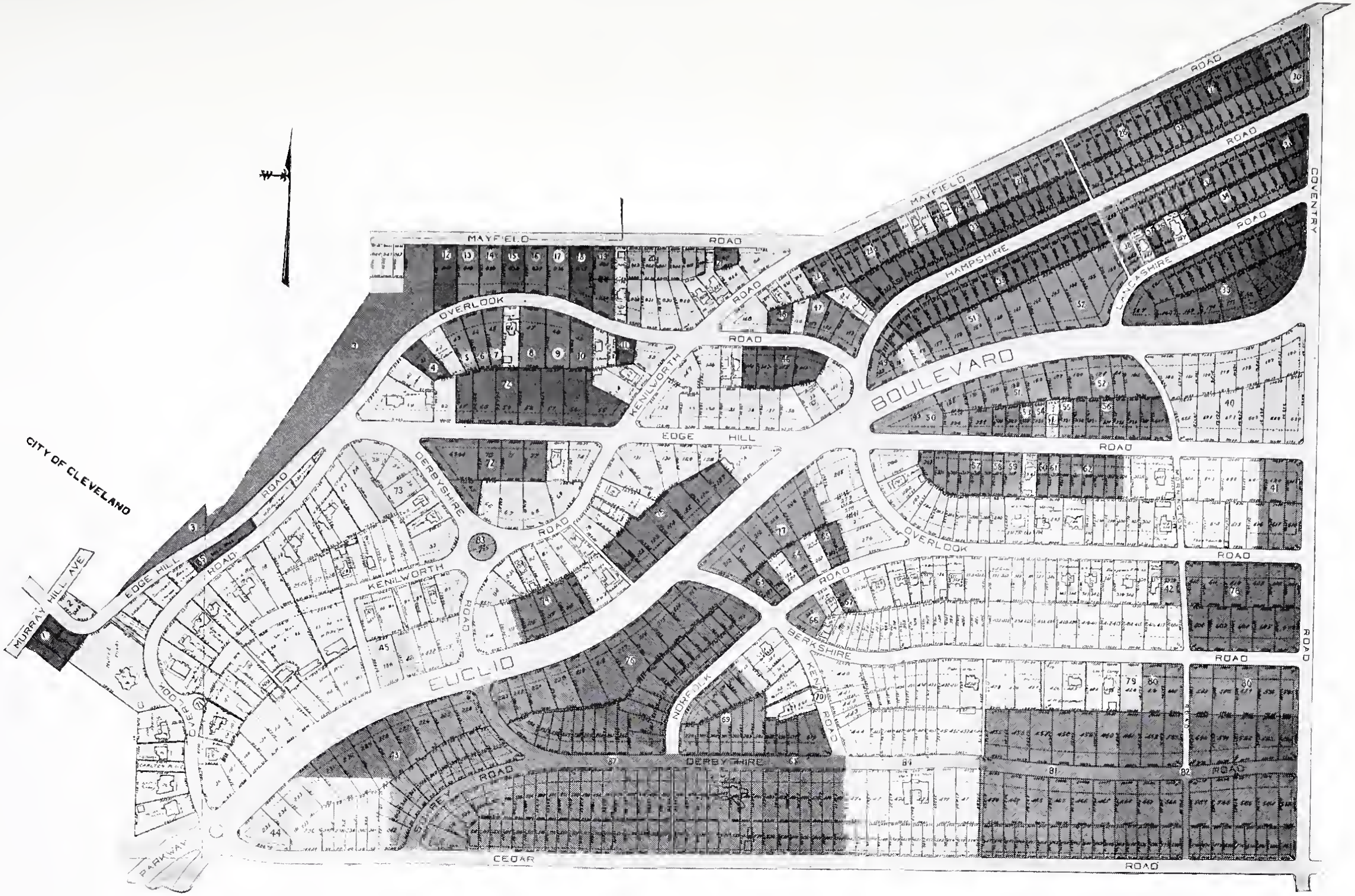
PLAN OF WADE PARK ALLOTMENT, CLEVELAND, OHIO.



PLAN OF CLIFTON PARK, CLEVELAND, OHIO.



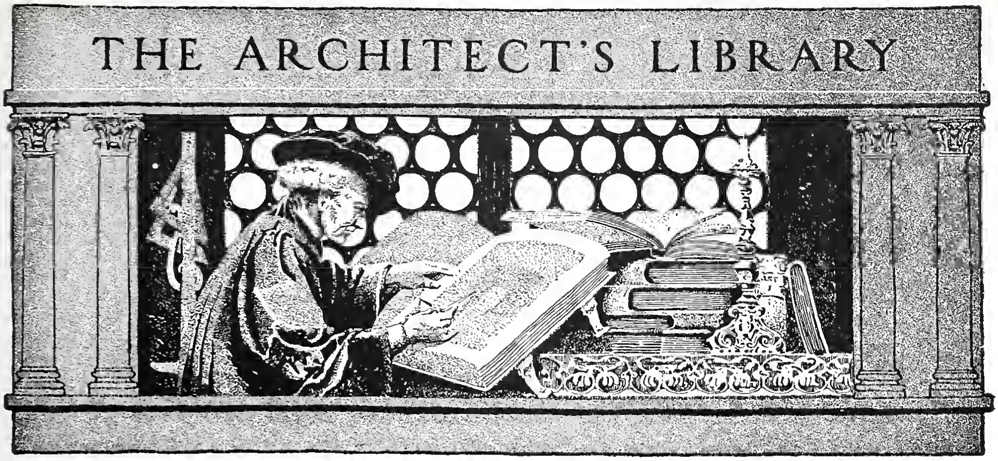
PLAN OF AMBLER HEIGHTS,
CLEVELAND, OHIO.



PLAN OF EUCLID HEIGHTS,
CLEVELAND, OHIO.

tendency of today with the established custom a generation ago, of huddling huge piles of brown stone masonry alongside narrow, crowded, downtown streets, a most encouraging improvement is seen in our ideals of living. Looking forward, we see most hopeful prospects of an infinite betterment in the mental, moral and esthetic conditions of our future cities.

AMBLER HEIGHTS.



WAR BOOKS OF THE CATHEDRALS

By BARR FERREE

II. VERDUN (Continued from February)

ALTHOUGH the siege of Verdun is still in progress, and the great conflict that has centered around it is scarce more than a year old, its literature is already voluminous. The books of special value that have appeared are those particularly concerned with the fighting at Verdun. These were naturally the first to be published, for the struggle was carried out on such a titanic scale that there was an eager world ready to absorb any book that offered definite information. Hence it was that, while the guns were still firing, a whole shelfful of books on Verdun issued in rapid succession from the French presses.

Additional impetus to this multitudinous publication was given by the French successes. The Germans failed at Verdun, and, as the battle proceeded, met with serious reverses. These later phases of the conflict have hardly, at this writing, made their entrance into books. A notable exception, however, is the story of the French triumph at Douaumont and Vaux, accomplished between October 21 and November 3, and graphically described by Capt. Henry Bordeaux in his beautiful book *Les Captifs délivrés,* already referred to.

But a secondary phase of the world-interest in Verdun is apparent in the publication of books by those who have participated in the battle at one time or another. Such books relate rather to the war as a whole; their authors have taken part in many episodes in many parts of the front; Verdun, in a measure, is secondary. That is to say, they are books that refer to Verdun rather than are directly concerned with it. Notwithstanding the magic of the glorious name, Verdun is, after all, to these writers, only an episode in a crowded military experience. It would be a mistake, however, to designate these books as without value or without Verdun interest. They have both.

A case in point is *Sur les Routes du Front de Meuse* by J. M. Bourceret. The author is a priest who served with the ambulance corps, and gives to his book the sub-title of *Souvenirs d'un Infirmier-Major.* He has both fine descriptive powers and a keen eye for ladies, that neither the hardship of the war nor his sacred office diminished. He writes with engaging frankness, and does not hesitate to tell us that once he was so exhausted he forgot his prayers before going to bed. "Vite à genoux. Un petit mot à Dieu pour lui demander de nous protéger, une invocation à la Vierge, et puis comme les autres, en avant pour dormir." One takes warmly to the good man with his little word to God, and follows with interest his exhausting career, even though his stay at Verdun was but brief.

Somewhat similar, in that it is concerned with ambulance work, and also by a priest, is *Le Train Rouge: Deux ans en Train sanitaire* by Albert Bessières. It has already run into two editions. The story begins with the commencement of the war in August, 1914, and extends to Verdun, where he saw some days of service in March, 1916, and again in August. The two years covered by the book represent service at many points of the front and presents many graphic pictures of the constant throb of war, its many privations, and the enormous difficulties under which the sick and wounded were cared for.

Capt. André Pavie, who has several books to his credit in the pre-war period, has prepared a capital account of army life in his book *Mes Troupiers: Artois, Argonne, Verdun.* Like the Abbé Bessières, he begins with the commencement of the war, and tells the story of two years, 1914 to 1916, ending his account with August in the latter year. It is an admirably composed book, of fine literary quality, and gives many carefully drawn scenes of army life. He did not reach Verdun until August, 1916, and therefore did not take part in the fierce fighting in the early days. His book is alive with interest and has a proper place in the extensive literature of Verdun.

Only the opening section of André Dollé's *La Cote 304 et Souvenirs d'un Officier de Zouaves* is concerned with the colossal conflict around Hill 304. But these are vital pages, overflowing with experiences. Heroes lived but a single day at this dread spot, many not so long; our author himself was wounded there and naturally could not continue his account beyond the time of his personal participation. His last experience would seem bizarre were it not so horrible. The chauffeur of the ambulance in which he was taken away was killed by a shell after the car had been loaded with wounded. Without removing the dead body, the task of driving was quietly taken by a wounded Parisian who brought it to safety. Then only were the double drivers, one dead, one alive, discovered. The balance of the book is filled with sketches of various episodes in the war, written at many widely spaced places. The illustrations by P. Magnaldi and the author deserve more than passing mention.

No book on the war can escape the horrible, much less one that deals with Verdun; but *Les Poissons morts* by Pierre Mac Orlan may rightly be designated as a sprightly, lively book; at times it is downright amusing. His chapters on adventures with rats, the methods of killing them and their escapes from concerted, almost regimental attacks, are highly diverting. Rats have always been a serious menace to troops in the trenches, but although constant annoyances, they cannot well be seriously treated. Here they are shown with delightful humor. The author draws many pictures of war in Lorraine, Artois, Verdun and the Somme. Lightly drawn, his sketches admirably supplement more ambitious works. Verdun fills but a small place in the book, but neither the skill nor the amiability of the writer can hide, or seek to hide, the grim visage of war that looks out from the strange people he met and the singular adventures that befell him. The book is delightfully illustrated with many sketches by Gus Bofa; sketches that really illustrate, and which are in fine harmony with the quiet humor of the text.

There is no humor in *Les Campagnes ardentes* by Levis Mirepoix. This is a masterpiece of the war, crowned by the French Acadamy. War in all its ghastly modern horror lives again in these blood-dripping pages. The author conceals nothing and modifies nothing in the least. Why should he? To him, and to all Frenchmen, the war is not only the most dreadful reality, but the most dreadful thing the human mind has conceived. This book is not only a serious document of the war, but an exceedingly able plea against war at all! M. Mirepoix suggests nothing of the sort; he is much too concerned with the realities of the events he describes to debate any question of peace or of war's relation to humanity. But one cannot read his amazing pictures of war's realities without thinking that if, indeed, this be war, as it is, of what advantage is it?

The book is a series of sketches, of which the chapter on Verdun is but one episode of many; sketches strongly drawn by a skilled and practised hand; sketches of absolute horror in conflict; sketches of the utter ruin of humanity. It is a book that stands, if not quite alone, at least with but two or three others in depicting war as it is. Here is the true war as it is lived in the early years of the twentieth century.

Just what may be the best time in which to put forth a general history of the war is difficult to say. The theme is so vast, it covers so much territory and is concerned with so many peoples that the relationship of a campaign in one sector to that in another or to the whole is too complex and varied to be readily comprehended. These difficulties are not lessened by the continuation of the war; for sectors rise into importance and sink into forgetfulness, more lands and peoples are involved and the whole world is aflame. Well ordered accounts of the war as a whole may, therefore, have a real value in clarifying the remembrance of events forgotten for the moment. Some such useful task as this has been attempted by General Malleterre in his *Etudes et Impressions de Guerre,* of which two volumes have appeared at this writing. He covers all fronts, both in the East and the West, treating them not continuously, but as they assumed special importance. In the end it will probably be found that this method is the most satisfactory one for this gigantic topic. The battle of Verdun from February to June, 1916, occupies a substantial place in the second volume.

L'Assassin Innombrable by Félicien Champsaur is described by its author as a "dramatic symphony of hate against William II, King of Prussia, Emperor of Germany." Its preface is concerned with *l'Enfer de Verdun.* The author was fortunate enough to be accorded an opportunity of visiting Fort Douaumont soon after its capture by the French on October 24, 1916. This lively account of this deeply interesting adventure is, with the exception of Henry Bordeaux's remarkable book, the latest in point of description that has appeared at this writing. With the capture of Douaumont and Vaux, and the attendant defeat of the German campaign, the world-interest in Verdun ceased for a time. Other sectors rose into fresh activity; the interest of the whole world was no longer absorbingly centered on this sacred spot. But though we may hope the worst is over, the battle has not ceased, and at the time these notes were written the Verdun front still appears almost daily in the *communiqués officiels.* Meanwhile the twin towers of the cathedral, in themselves of no beauty, still rise high above the mighty battlefield and have become new symbols of a glory never to be forgotten.

BOOKS RECEIVED FROM PUBLISHERS.

Memoirs of the American Academy in Rome, 1915-16. 54 plates, 167 p., 11 by 14 inches. New York: American Academy in Rome.

Planning Sunlight Cities. By Herbert S. Swan and George W. Tuttle. 9 p., reading matter, 9¾ by 6¾ inches. No. 167. New York: The Civic Press. Price 20c.

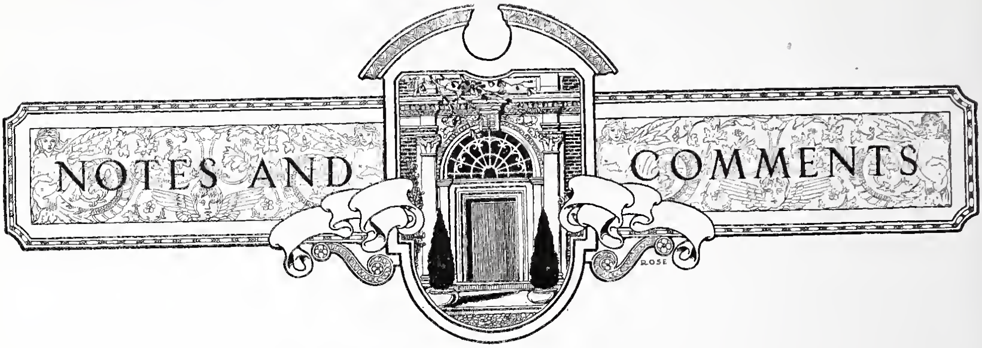
The Bombardment of Reims. By Barr Ferree. 121 p., 1 map and 4 ills. 5 by 7½ inches. New York: Leonard Scott Publication Company. Price $2.00.

The Lighting Art: Its Practice and Possibilities. By M. Luckiesh. 224 p., 43 ills., 9 tables. 9¼ by 6¼ inches. New York: The McGraw-Hill Book Co., Inc. Price $2.50 net.

An Introduction to the Study of Landscape Design. By Henry Vincent Hubbard and Theodora Kimball. 406 p., many plate ills. 12 by 9 inches. New York: The MacMillan Company. Price $6.00.

Housing Problems in America. Proceedings of the Sixth National Conference on Housing, Chicago, 1917. Articles on "Housing" by various authors. 462 p., 9 by 6 inches. New York: National Housing Association.

The Strength of Structural Elements: A Text-Book for Students, Engineers and Architects. By Ernest H. Sprague, A. M. Inst. C. E. 200 p., with examples, 5 plates and 112 ills. 7½ by 5 inches. London: Scott, Greenwood & Son.



NOTES AND COMMENTS

The Architectural League Exhibition.

In connection with recent exhibitions of the Architectural League, those conversant with architecture and its attendant arts in New York have maintained an expectant attitude. For this reason, in discussing the exhibition for 1918, it should be borne in mind that the membership of the Architectural League of New York is not confined to architects. While it may be the purpose of the League to advance the cause of architecture, it is also its purpose to advance the cause of the accessory arts which aid in giving it grace. Of the major arts we usually can get together a representative exhibition in America; of certain minor arts we also succeed in making an excellent showing; but of the relation of these minor arts to the building no record has hitherto been made in exhibition form. Architecture exists largely by the grace and good will of many other arts, which, though functioning as its handmaidens, must nevertheless be granted an independent encouragement if they shall be made to flourish for the benefit of architecture. It is to afford such encouragement that the League has seen fit to broaden the scope of its exhibitions. It must be borne in mind that in the League there are craftsmen whose arts demand appropriate recognition, and without whose efforts architecture itself retains no immediate attraction. While there may be some question as to the advisability of the particular methods by which decorators and manufacturers have been asked to exhibit, there surely should be no question whatever about the advisability of demonstrating the best and latest products of all the arts ancillary to architecture.

The current exhibition has been described by some facetious critic as a good example of how far a nail may be driven by striking beside it. If the purpose were to improve architectural design, especially exterior design alone, this criticism might be said to apply. It has also been said that the League exhibition is a recognized stamping ground for decorative artists (happy figure!) afflicted with the germ of some particular type of art expression. To be sure, something of eccentricity will always appear in such an exhibition. If a shot is fired across the water to bring up from the bottom some submerged object, it is probable that the findings will be full of surprises. The depths of the artist mind, like the depths of the sea, cannot be stirred without incurring this danger; but is it not better to bring out such unwelcome features and methods and show them their place in order at the same time to bring forth true achievements worth recording? The efforts of the League are distinctly creditable in its purpose to bring out latent American cratfsmanship as allied to architecture. Even a cursory examination of this year's exhibition abundantly demonstrated the feasibility of the present methods for encouraging craftsmanship.

Shall we say that fields of other organizations have been usurped? Shall we say that minor arts have been popularized at the expense of architecture as a whole? These are questions which this year's show will not solve for us, chiefly because the war has laid such a heavy hand upon the architectural profession, reducing building itself and at the same time seeming to encourage decoration. This condition should explain the general predominance of furnishings and furniture, and to a certain degree the willingness of manufacturers and dealers to enter the exhibition as it was planned this year.

The regular run of framed photographs and drawings was not below par by any means. For those who sought them out, these exhibits were as good an indication of American architectural advance as those of any previous year. However, the real interest of the exhibition was to be found in the scheme of alcove and complete room exhibits by various firms of manufacturers and of decorators. As to the alcove or small-room plan of exhibition, as demonstrated this year, various criticisms have been made. Naturally the first had to do with the size of the space assignments, and in this we must agree. It is to be admitted at once that no adequate scheme of furnishing can be carried out in a small alcove; yet in these very alcoves is the germ of the ultimate solution. We in America have taken a long time to come to the realization that the various items of furnishing are in themselves weak and unconvincing for any but the *cognoscenti,* unless shown in proper relation to their various supporting and adjacent features. In this direction, well illustrated by many European exhibitions, this year's League showing has made a distinct advance. Considered in conjunction with the Better Homes Exhibition at Grand Rapids, held in December, it may be said that the League has at last struck out in the right direction. But here again, while many good things were brought to light, many poor ones were given a place in the sun which they did not deserve. The fact remains that space must be paid for, and when space has been contracted for it is somewhat difficult to persuade a manufacturer that he really ought not to show at all. It is also to be admitted that a number of firms capable of excellent results were willing to sacrifice real quality to novelty. We have yet to reach that point where an exhibition loses the garishness of rank advertising; exhibitions should be construed as graceful advertising, not as shrieking efforts to elbow the competitor out of the track. However, the beginning has been made and subsequent showings may be expected to contribute some interesting sidelights on American industrial art design and its handicaps.

Above all, the League exhibitions have been able to prove that the innate art feeling of the American layman will find a way out of its shell if suitable provocation is offered. The layman made it clear—any one listening to comments at the exhibition would say the same—that he is gradually coming to a certain appreciation of things in the arts, of which the alleged experts are certainly not fully aware. The layman has learned to point to this or that, and call it good for a certain assigned reason; and again he has repeatedly put his finger on specific items of unpleasant design that should make some manufacturers uncomfortable. And finally, the layman always has ready that pertinent question in regard to utility and availability and ultimate quality which will sooner or later get to the factories and have its due effect there. It is in such reflection that the purpose of this project comes to the fore. Given the principle laid down this year, make certain modifications as to arrangements and as to control and harmony of design, add the greater quantity of architecture which a normal year would bring, and we may be safe in saying that an ideal exhibition would result.

The education of the layman is a responsibility that lies upon all artists. The schools do not help out in this respect. It is well that the layman should learn, as he can from such an exhibition, that architecture is the mistress art and not the only art.

The education of the manufacturer is another matter. Such exhibitions will help in that direction as well, but it is an uphill road. Still, standards can be established only by careful comparison of values; and standards can be maintained only by competition in making individual values approximate the standard set. Collaborative exhibition assuredly sets a high standard, and should also give ample opportunity to permit individual values to appear to advantage. The idea of "get together" is an admirable one, provided always the architect himself does not hold aloof, as present conditions almost forced him to do this year, so far as the League exhibition seems to show. It is a happy day when craftsmen and artists of many different clans are willing to rub elbows and compare results. By such process the relative effectiveness of each will appear; and it is relative effectiveness that counts in the end. The sovereignty of the individual arts is very much like the sovereignty of the several States of the Union. What is more, there is the item of good fellowship, which it might be well to consider; for we all know too well how little there is of interchange of ideas among artists of different pursuits.

We distinctly do not believe that good judgment will permit the exhibition policy of the League to continue to offer an outlet for all sorts of art creeds in the galleries under its aegis. But, then, who shall judge finally as to what is exotic or ridiculous or farfetched? And again, who shall judge as to what is so utterly traditional as to be banal? There are heretics in both camps.

As to the arrangement generally, it may be said that the decoration dwarfed the exhibits in the large halls. We are old fashioned enough to believe that bold general schemes of decoration should not be permitted to compete with the crowded colors and varied forms of the exhibits themselves, necessarily restricted to limited quarters for each display.

The conception of a collaborative exhibit is fraught with great possibilities. It is hoped that in another year there may be an even better concert of efforts of all branches, perhaps even in the decoration of large rooms. A whole gallery devoted to the needs of two or three splendid rooms will carry a message as no aggregation of small exhibits can. The smaller exhibits would not need to be crowded out. Let the manufacturers and dealers and designing craftsmen collaborate in the fine rooms proposed, and then exhibit in an adjacent gallery other items of their respective lines. It is in this collaborative type of exhibition that the modern crafts of Europe have been given a new life. What is more, let there be more rendered drawings, showing the use of materials in actual examples; or let there be careful color plates or color transparencies to show relations of selected objects to others furnished by manufacturers in other branches. Such views shown with sample exhibits have a salutary effect.

The attention of the critic must center on the quality of craftsmanship brought out by the League exhibit. It is for this that the collaboration of all the crafts was arranged. To criticise the treatment of the galleries themselves is secondary. We may safely say that the desired result was achieved. Mr. Magonigle and his lieutenants in this project have rendered a service to architects as well as to craftsmen.

Richard F. Bach.

Save Your Discarded Cotton and Linen Cloth for the Red Cross.

American manufacturers, architects, and all draftsmen are called upon to render an important service to their country. When the workman has finished with a piece of cotton or linen cloth used in his trade it is flung aside to be destroyed. The Red Cross is asking now for that discarded material. All over the country thousands of women are earnestly engaged in the manufacture of surgical dressings to be used in the hospitals for our wounded soldiers and sailors. The problem of getting enough white goods for this work is enormous. As long as the war goes on the work must go on if we are to live up to the humanitarian ideals typified to the world today by the Red Cross.

Two kinds of cloth are available—draftsmen's tracing cloth and old linen and cotton articles to be donated from private households and, often in large quantities, from hotels. These can be easily collected and handled by the modern laundries, which have now been called upon to perform this work for the Red Cross. With their facilities for collecting, washing, sterilizing and delivering to the local chapters, the laundries are in a position to perform an invaluable service, and the least that other trades can do is to help them in every way. If any manufacturer, architect or draftsman will go to the slight trouble of calling up either the local Laundryowners' Association or one of the large laundries of his city he will find them only too glad to send for such cloth as he can give them.

These materials the laundry will handle with the greatest possible care, because, as the National Laundry Journal for December 15, 1917, says: "Remember, it is a matter of life and death—first, that you do this work, and second, that you do it right."

Taking up the task, therefore, in such a spirit, the Journal goes on to give the practical details for treating this draftsmen's cloth:

"Some of the tracing cloth is thin linen fabric and some is thin cotton, but whether it is linen or cotton makes no difference in the washing process. The cloth has been treated with a gelatinous dressing, to make the material take ink and at the same time be transparent. The dressing seems to resemble starch that has been ironed in the goods, in that it is softened by water, but does not completely dissolve, and comes out and leaves no trace of stiffness in the goods. As the goods are to be used as surgical dressings, it is desirable that no starch remain and that the goods be as soft as possible. This end is best attained by the use of malt extract, or diastase, which is an inexpensive starch solvent. A short breakdown of malt extract, which is familiar under manufacturers' trade names, at a low temperature, will remove most of the drawing ink and at the same time take out all of the dressing that is in the tracing cloth. Those who have not the malt extract at hand will be able to do this work by use of a cold rinse, followed by a hot suds, but the goods will not be as soft as when the malt extract is used. The goods should be given a fairly strong bleach, followed by a sour, to remove the trace of bleach that may remain. Then there should be a good rinse, to remove every trace of the sour. The bleach will completely sterilize the goods; hence a boil is not necessary.

"The goods should be extracted as usual, after which the material should be put through the drying tumbler, if one is available, as then the pieces will be soft and pliable. If a drying tumbler is not available, the pieces may be put through the flat work ironer. If it should happen that some drawing ink remains on a piece, it should be put aside and laundered again with another lot of white goods. Tests have indicated, however, that ink comes out almost entirely with the wash and the bleach."

The greatness of the demand for old linen and cotton cloth is being measured up to by the willingness of the laundries to take over this work. Be sure, then, to notify them if you have any of this much-needed material.

Your promptness to respond to this call may, in sober earnest, become a matter of life or death to some of our wounded men across the sea.

American Red Cross,
Washington, D. C.

THE MORE MODERN EUCLID AVENUE.

The Passing of a Famous Avenue.

One of the unfortunate features incident to the development of a growing city is the sacrifice of many a once beautiful residence street to the demands of commercial expansion. New York has seen the splendid mansions which once lined Fifth avenue gradually give way to shops and office buildings, and every big city can point to busy thoroughfares which were once the seat of fashion.

The city of Cleveland was famous a generation ago for its Euclid avenue, which was referred to as one of the most beautiful thoroughfares in the world. Today, strangers in the city are wont to make this avenue the first object of their sight-seeing and are disappointed at finding that the residences which were its pride are gradually being shouldered aside by the aggressiveness of trade.

A decade or two ago an attempt was made to preserve Euclid avenue from the fate which has overtaken so many of its kind by removing from it all business blocks and street cars and boulevarding it from East Ninth street to the city limits. It was a splendid project and, had it been carried out, would have given to Cleveland a residential boulevard un-

THE OLDER EUCLID AVENUE.

equaled by any in the world. But like many another worthy enterprise dependent upon the intelligence (or otherwise) of politicians, it failed of support. The type of intellect that is generally found in charge of municipal affairs is not the type which possesses vision. In this case it could see the difficulties involved in moving street railways and heavy traffic to parallel streets, it could see the drawbacks involved in razing a few commercial buildings and interrupting the business of a few saloons, but it was hopelessly unequal to the task of visualizing the benefits to be obtained by establishing a restricted residential boulevard stretching five miles from East Ninth street to the city limits, with the possibility of another five or ten miles of extension through the adjoining suburbs.

THE AVENUE AS IT IS BEING TRANSFORMED.

Today the avenue is still beautiful, but the first downtown mile is wholly given over to business; at the intersection of many of the important crosstown streets a little nucleus of business blocks has sprung up, from which there is noted a steady, gradual growth in both directions; the families that would have built beautiful residences along the proposed boulevard are building instead on the Heights or along the Lake Shore and the fine old houses are one by one disappearing or being converted into boarding houses, clubs and artists' studios.

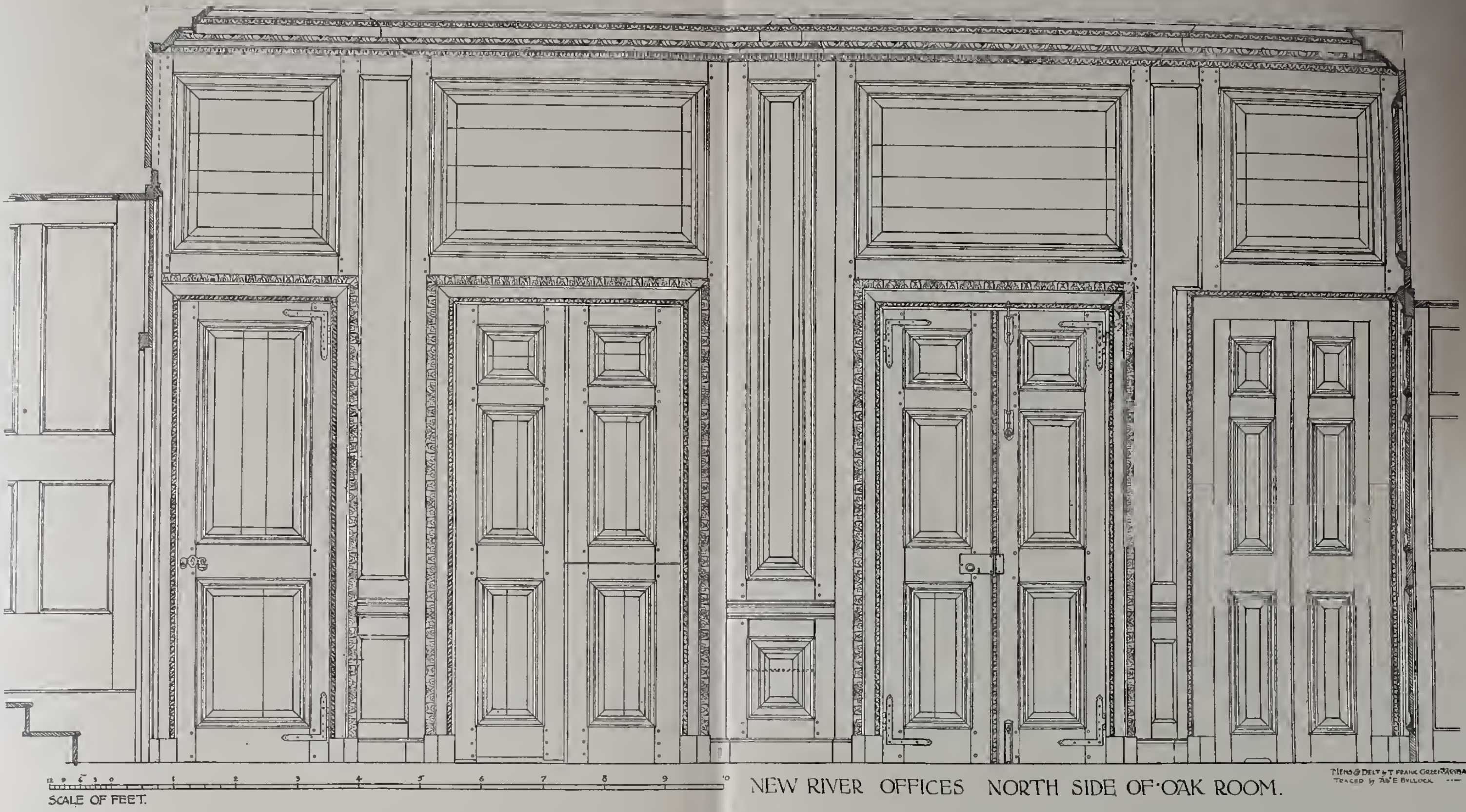
It is but two or three years since the last bars were let down and the trolley cars permitted to run through the exclusive section, familiarly known to the Philistines as "Millionaire's Row." The next logical step is being taken at the very time this is being written and the broad grass plots and shade trees, which added so much to the beauty of this portion of the street, are being cut away and the pavement widened to the line of the down town business section.

A few illustrations are given which show sections of the old avenue as it was pictured in the school books of our childhood, and also of the new avenue as it is being transformed by the touch of business.

It will doubtless become a great commercial street, but Cleveland possesses other streets which could have been developed just as well. It had but one Euclid avenue; no other street could take its place. As a commercial street it will be a great asset to the city, but could the stream of business and heavy traffic have been diverted in another direction and the avenue developed into a magnificent boulevard and artery of light traffic, three of the city's problems (business expansion, traffic and housing) would have been materially lightened, and Cleveland, with its great park system and slowly developing group of public buildings, would have ranked with the best cities of Europe in point of beauty.

It is too late now to redeem this lost opportunity, but it is to be hoped that the departing glory of Euclid avenue may prove an object lesson to other communities and bring home to them the necessity for more intelligent control of municipal planning and development. The Zoning Law of New York should be introduced in all cities.

I. T. Frary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SCALE OF FEET.

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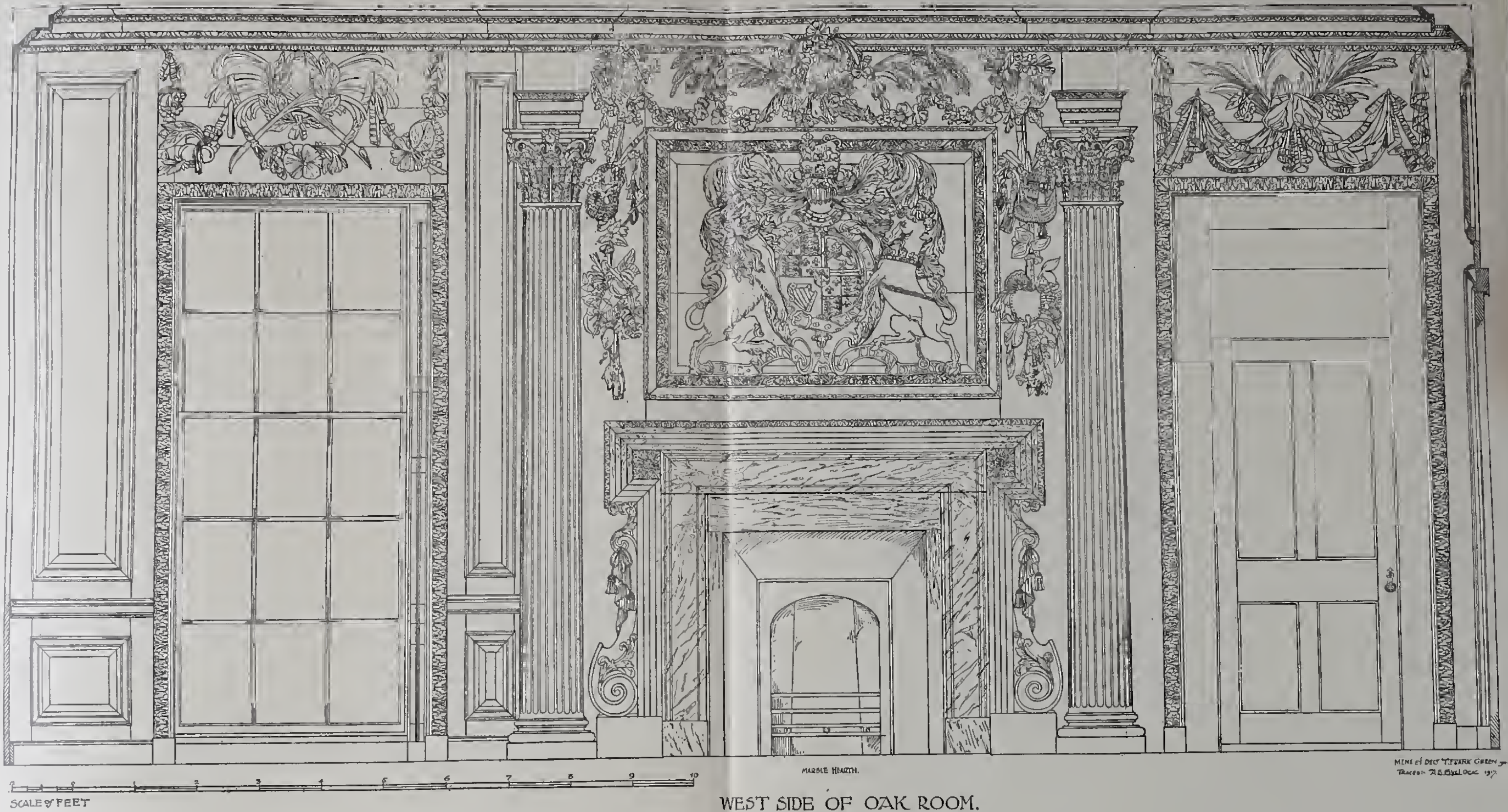

WEST SIDE OF OAK ROOM.
NEW RIVER Coy's OFFICES.

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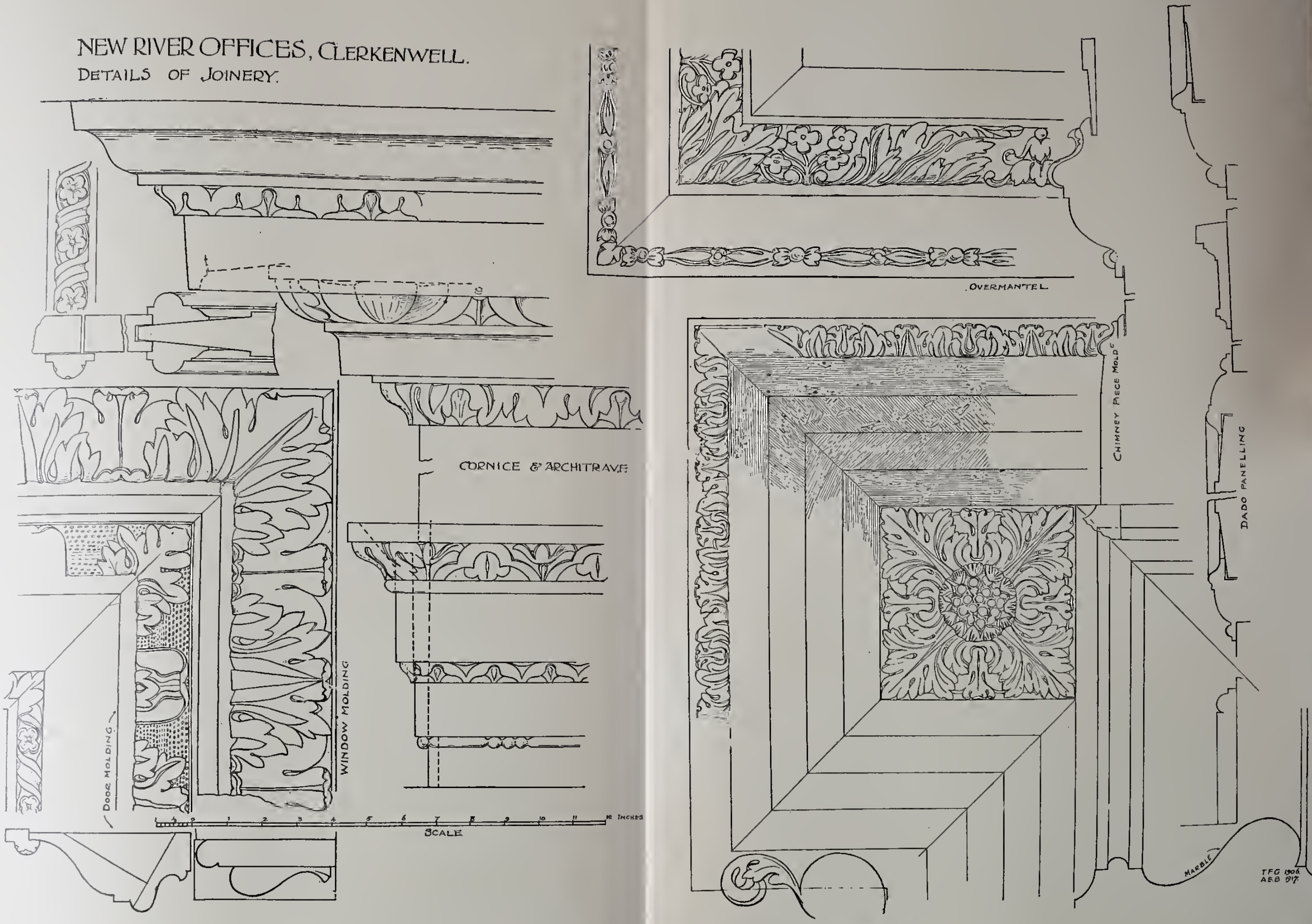
NEW RIVER OFFICES, CLERKENWELL.

DETAILS OF JOINERY.



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The

ARCHITECTVRAL RECORD

MAY 1918

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Bishopric Board means low cost for up-keep

Here is a row of ten double houses erected by The Haddon-Browning Realty Co. in West Collingswood, N. J. They all have stucco exteriors and the background for the stucco is Bishopric Board. The Haddon-Browning Co. designed these buildings to last and therefore used that most lasting background for stucco—Bishopric Board.

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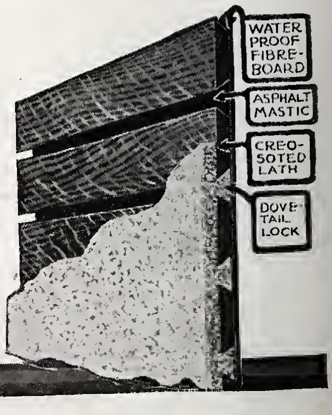

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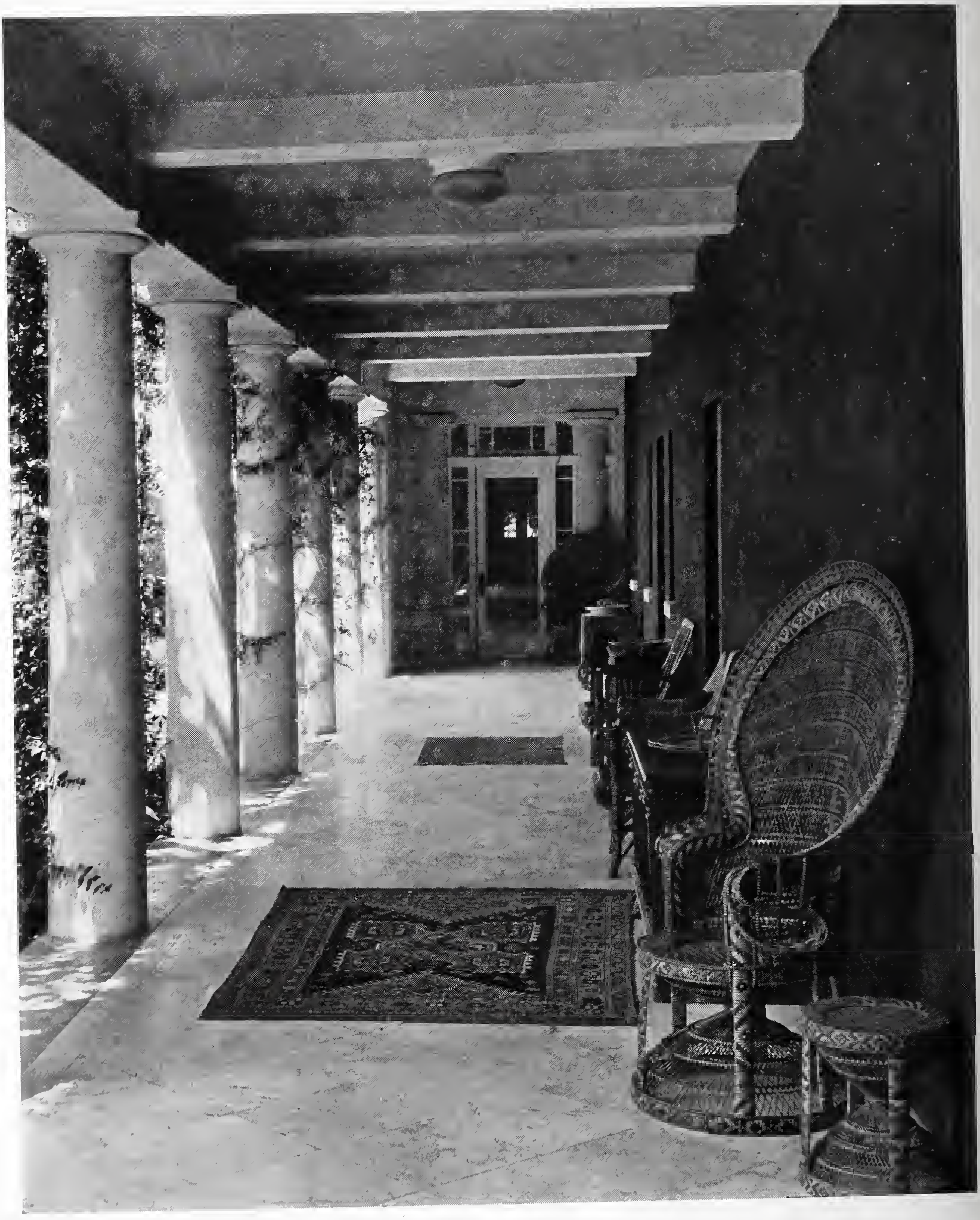

Photographs by Frances Benjamin Johnston.

GALLERY—RESIDENCE OF F. F. PEABODY, ESQ., MONTECITO, CAL.
FRANCIS T. UNDERHILL, ARCHITECT.

THE
ARCHITECTVRAL
RECORD

VOLVME XLIII NVMBER V

MAY, 1918

The RESIDENCE OF F. F. PEABODY, Esq., MONTECITO, CALIFORNIA

FRANCIS T UNDERHILL, ARCHITECT

THERE has always been a small minority of architectural students who hoped that domestic building in California would adopt Spanish precedents as its point of departure. They admitted, of course, the impropriety of Spanish models for all the cheaper grades of houses, which would inevitably be built of wood, and which would naturally assume freer, more varied, and more idiomatic forms. But in the case of more expensive houses built in the warmer parts of the State, where the land could be highly cultivated, there were many reasons for urging a deliberate attempt on the part of the California architect to domesticate and mould to the uses of modern American life the Spanish type of residence.

Such residences already existed in sufficient numbers to be more or less familiar to Californians. They had been built by the earlier settlers with Spanish blood in their veins and they connected California with a fascinating and romantic period of its history. They were adapted to the needs of the people who enjoyed a mild and temperate climate and who during certain parts of the year could live as much out of doors as indoors. They combined an almost classic severity in essentials with the opportunity for lively picturesqueness of effect in certain parts, such as the treatment of the roof, and in certain details of ornamentation. For all their simplicity they had the advantage of forming an adaptable model, which had already proved its availability in Spanish-American countries, and which could be modified, without being perverted, to meet the more complicated practical needs of a modern American household.

Notwithstanding, however, the many

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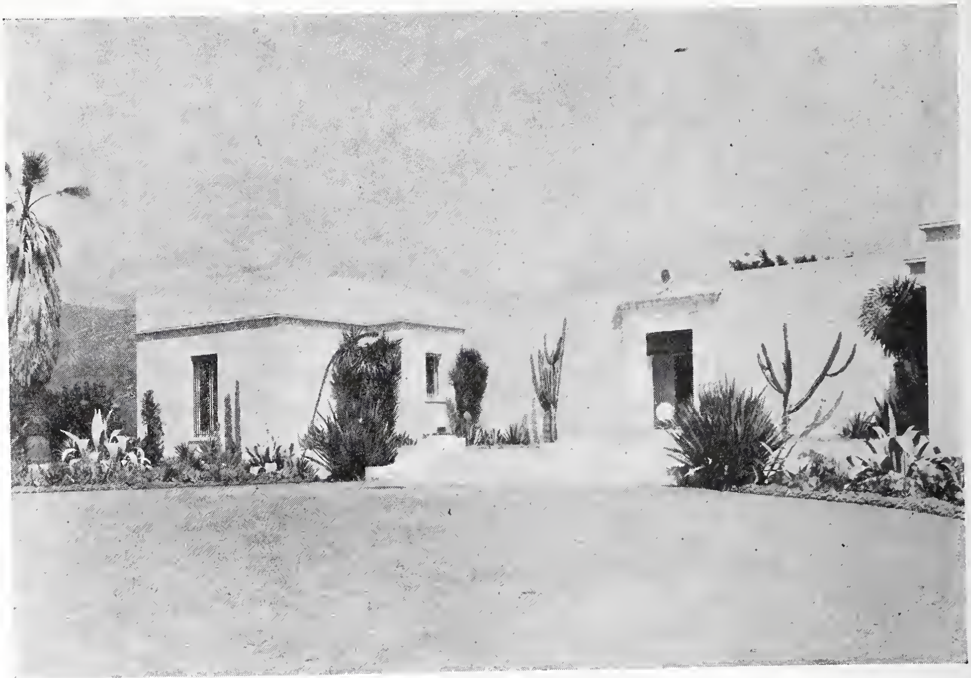
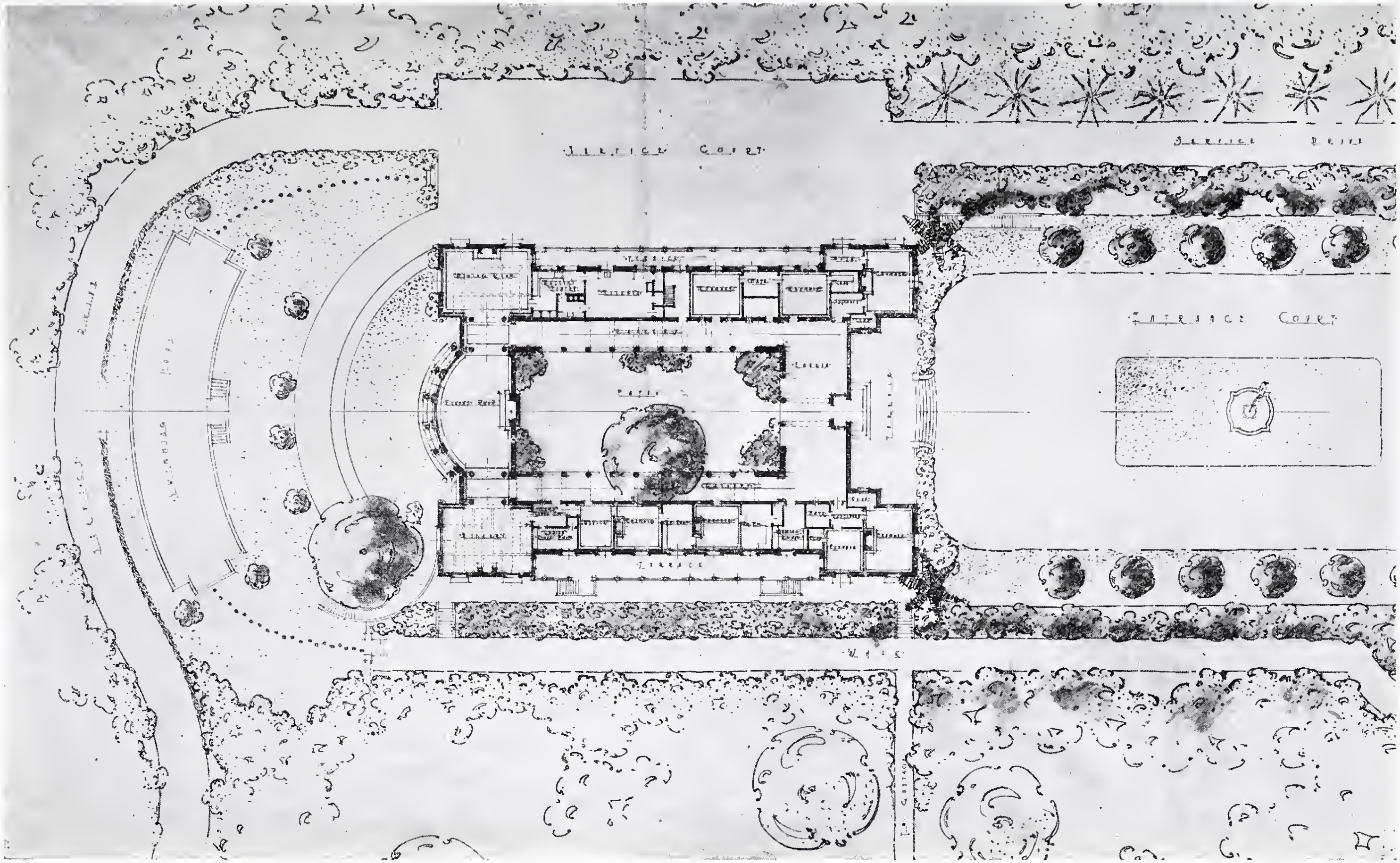


MAIN ENTRANCE—RESIDENCE OF F. F. PEABODY, ESQ., MONTECITO, CAL.
Francis T. Underhill, Architect.

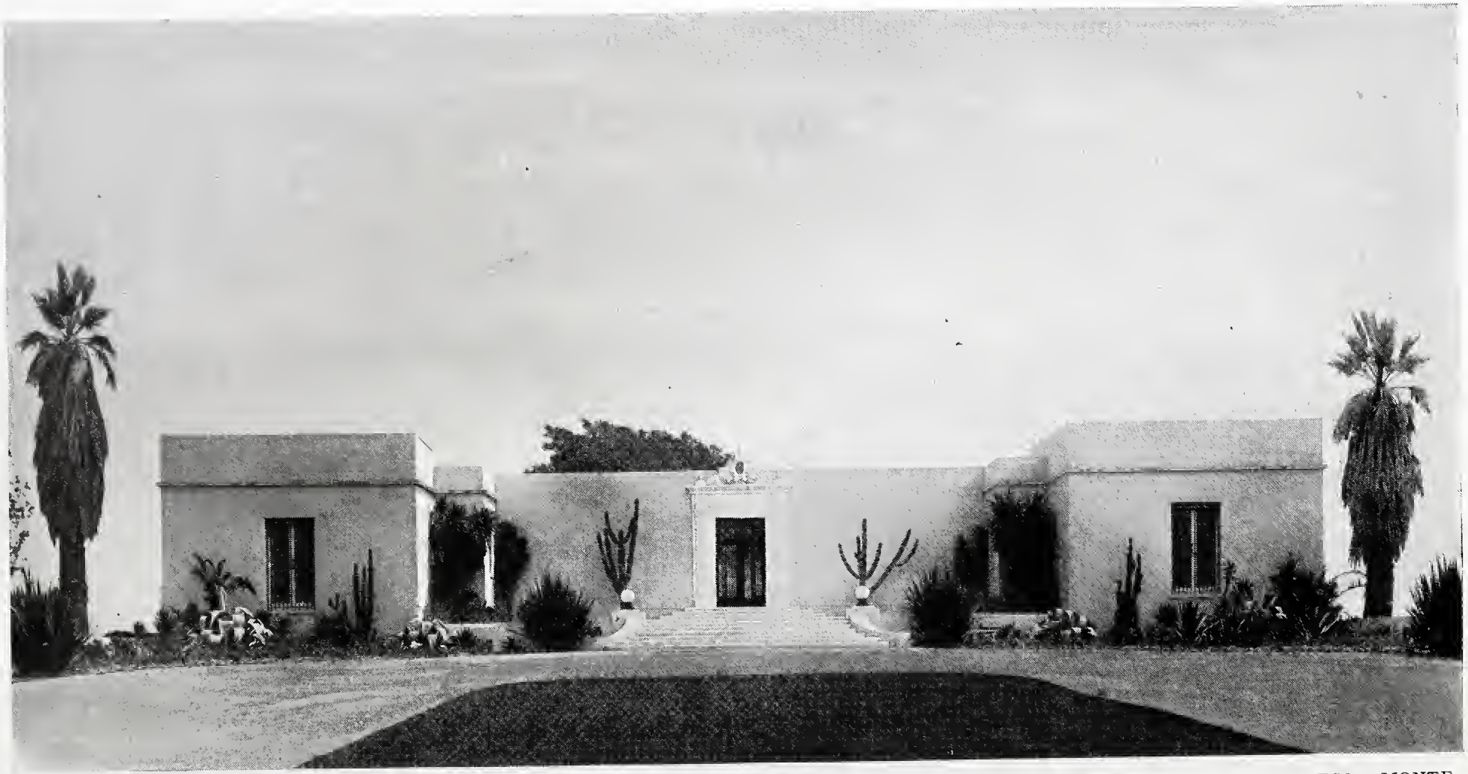
reasons which could be urged in favor of giving to the domestic architecture of California a dominant flavor of this kind, no deliberate or general attempt was made to adapt Spanish models. A good many houses which were supposed to be derived from the Mission churches and their out-buildings have been erected, but for the most part they are cheap, ignorant, tasteless and frivolous travesties of the earlier Mission forms. On the other hand, very few attempts have been made to recreate for contemporary use the long, low Spanish houses, which still survive in Monterey and elsewhere, and which must appeal to any one with architectural imagination as one of the great popular permanent and satisfactory types of domestic building.

There have been individuals, however, who have appreciated what could be done to domesticate Spanish residential forms in California. One of the most successful attempts to elaborate the general model into a modern American country residence is the Gillespie house in Santa Barbara, which was built more than ten years ago. Another attempt, no less interesting, is illustrated herewith and is also situated on the outskirts of Santa Barbara. It is the residence of F. F. Peabody, Esq., and was designed by Francis T. Underhill.

Mr. Peabody's house consists of a quadrangle of one-story buildings, outlining the four sides of a court or patio, which becomes, of course, a surrounded but not enclosed outdoor living room. A plan of this kind, which would be expensive and inconvenient in the case of a residence in a northern climate, is better adapted both to the climate of California and the needs of its inhabitants. It has the advantage of associating the life which is led within the house with outdoor sights and occupation, and that is a wonderful advantage in a country where the "out doors" is at once so beautiful and so genial as it is in Santa Barbara and other similar parts of the State. The occupant of such a house is far less separated from the countryside than he would be in a house two or more stories high, in which it was more possible to



GROUND PLAN—RESIDENCE OF F. F. PEABODY, ESQ., MONTECITO, CAL. FRANCIS T. UNDERHILL, ARCHITECT.



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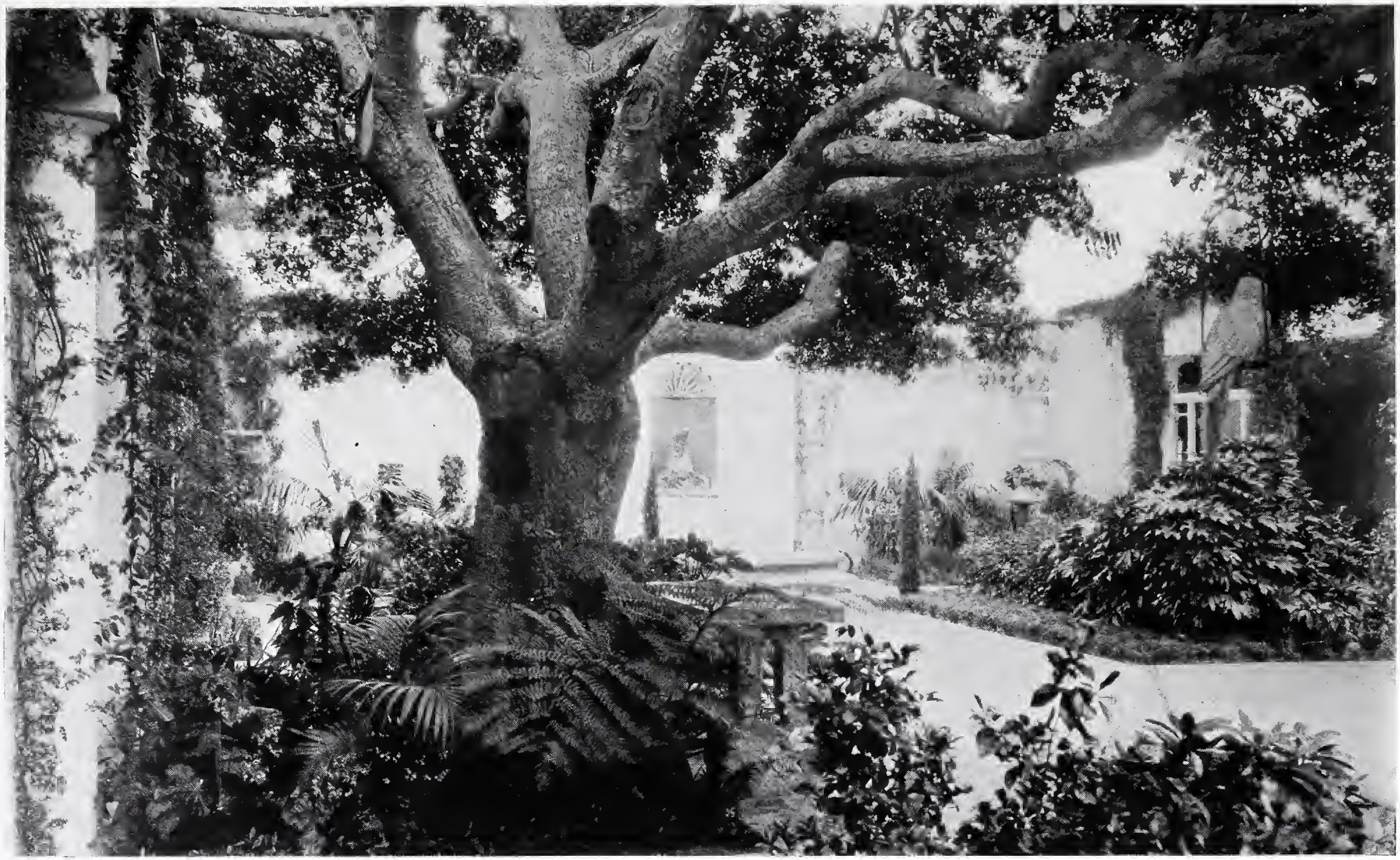

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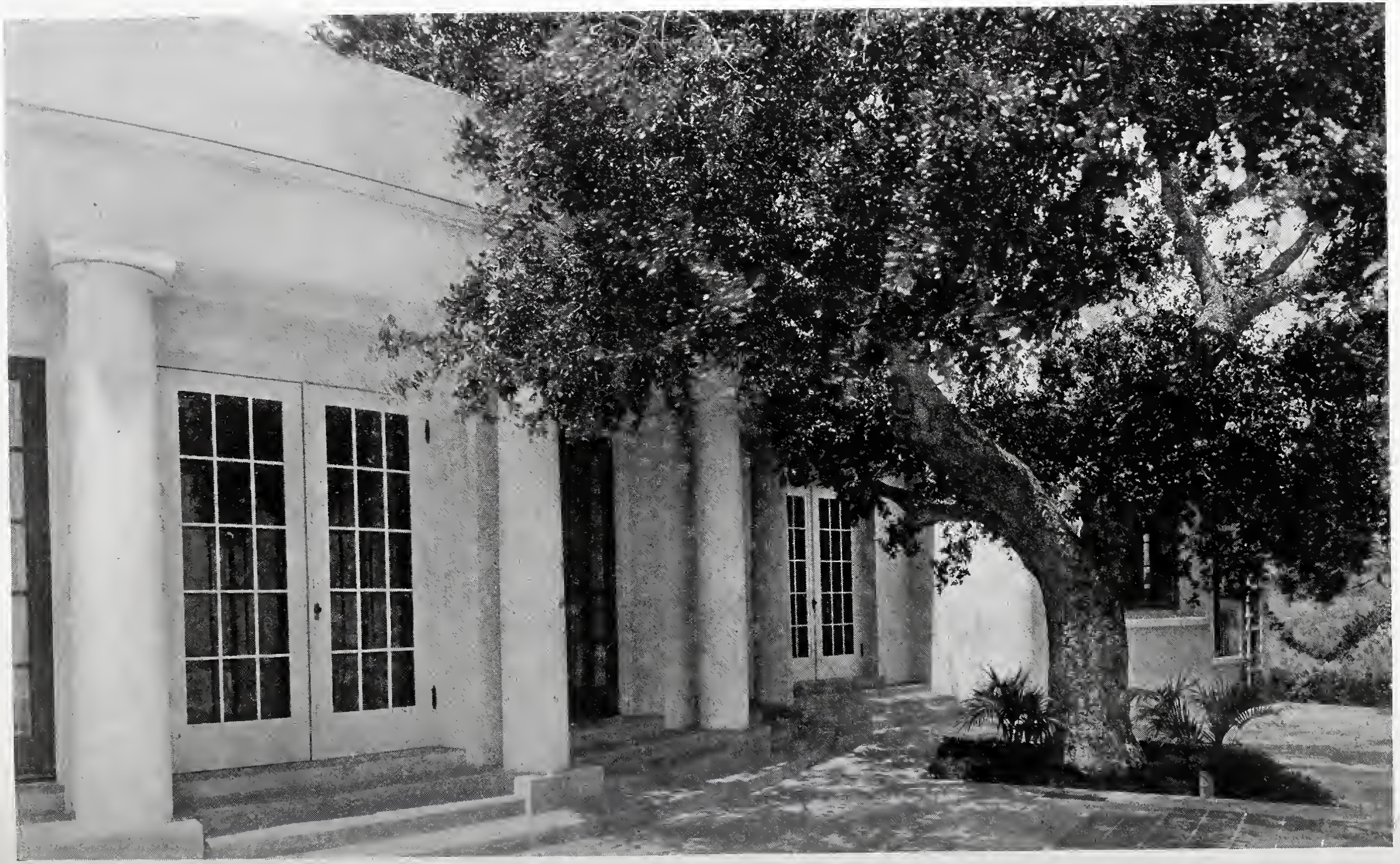
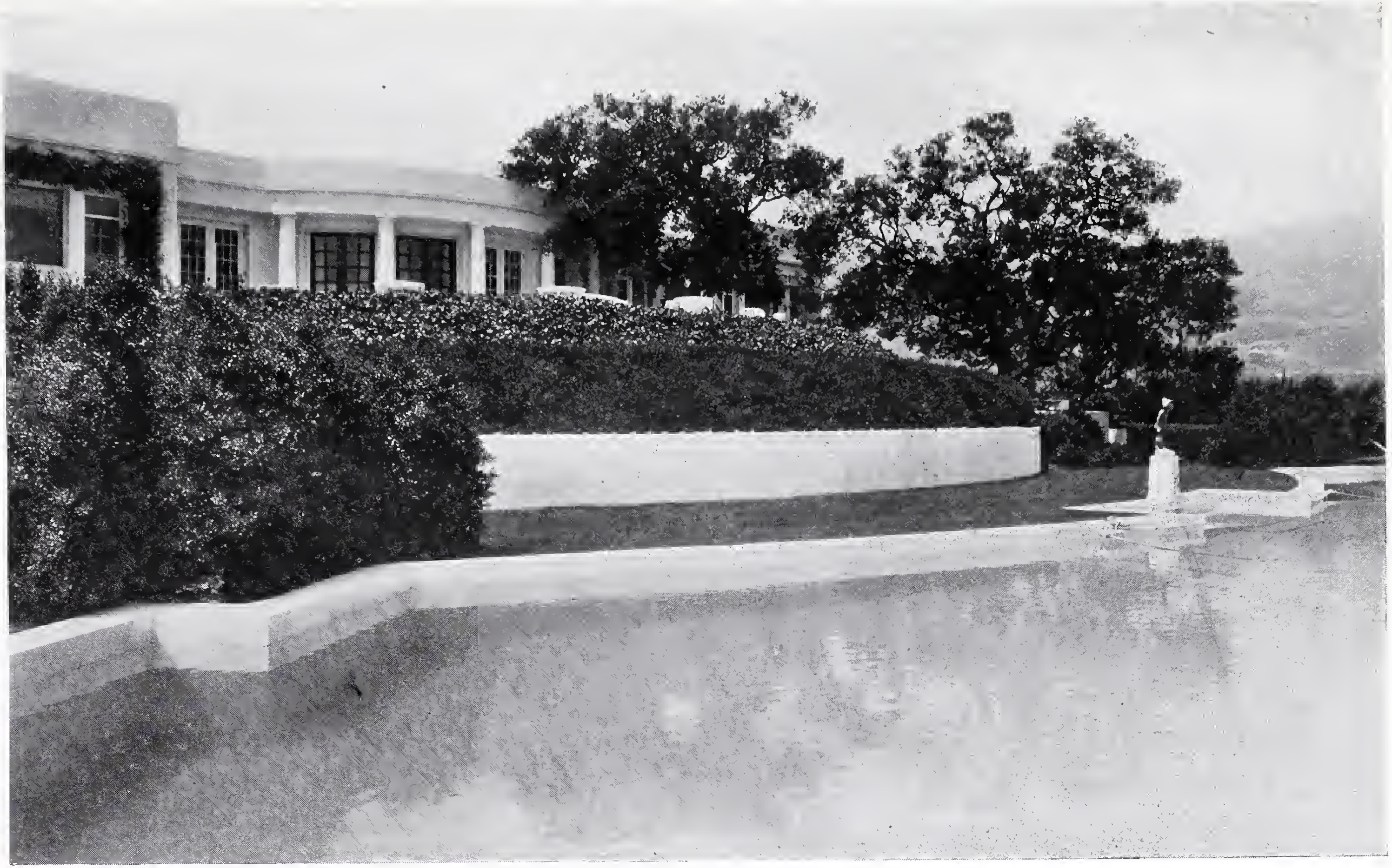
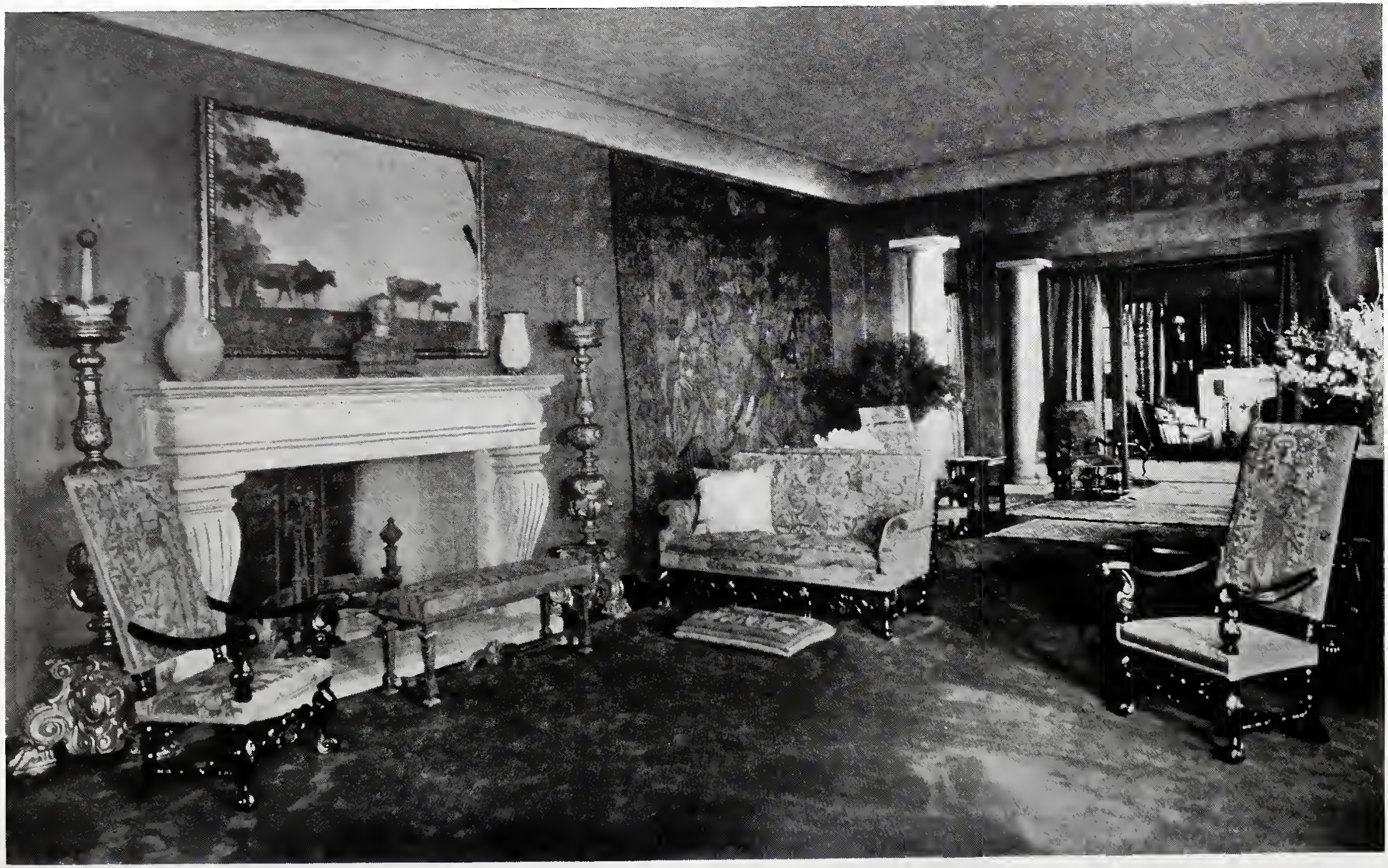


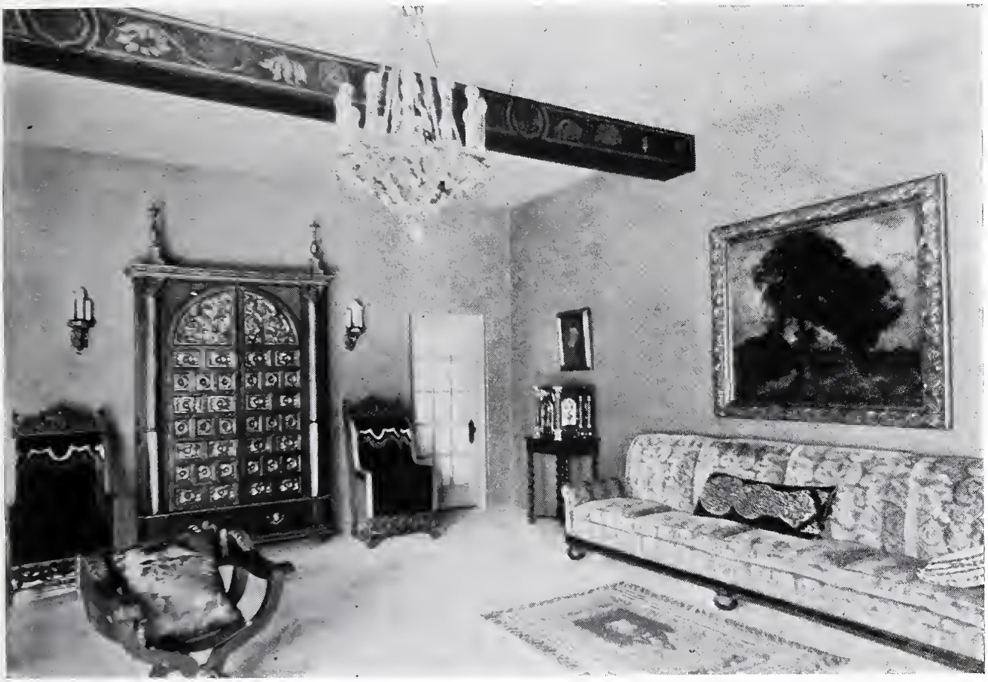
EAST TERRACE, OVERLOOKING SWIMMING POOL—
RESIDENCE OF F. F. PEABODY, ESQ., MONTECITO, CAL. FRANCIS T. UNDERHILL, ARCHITECT.



EAST ELEVATION, WITH SWIMMING POOL—RESIDENCE OF F. F. PEABODY, ESQ., MONTECITO, CAL. FRANCIS T. UNDERHILL, ARCHITECT.



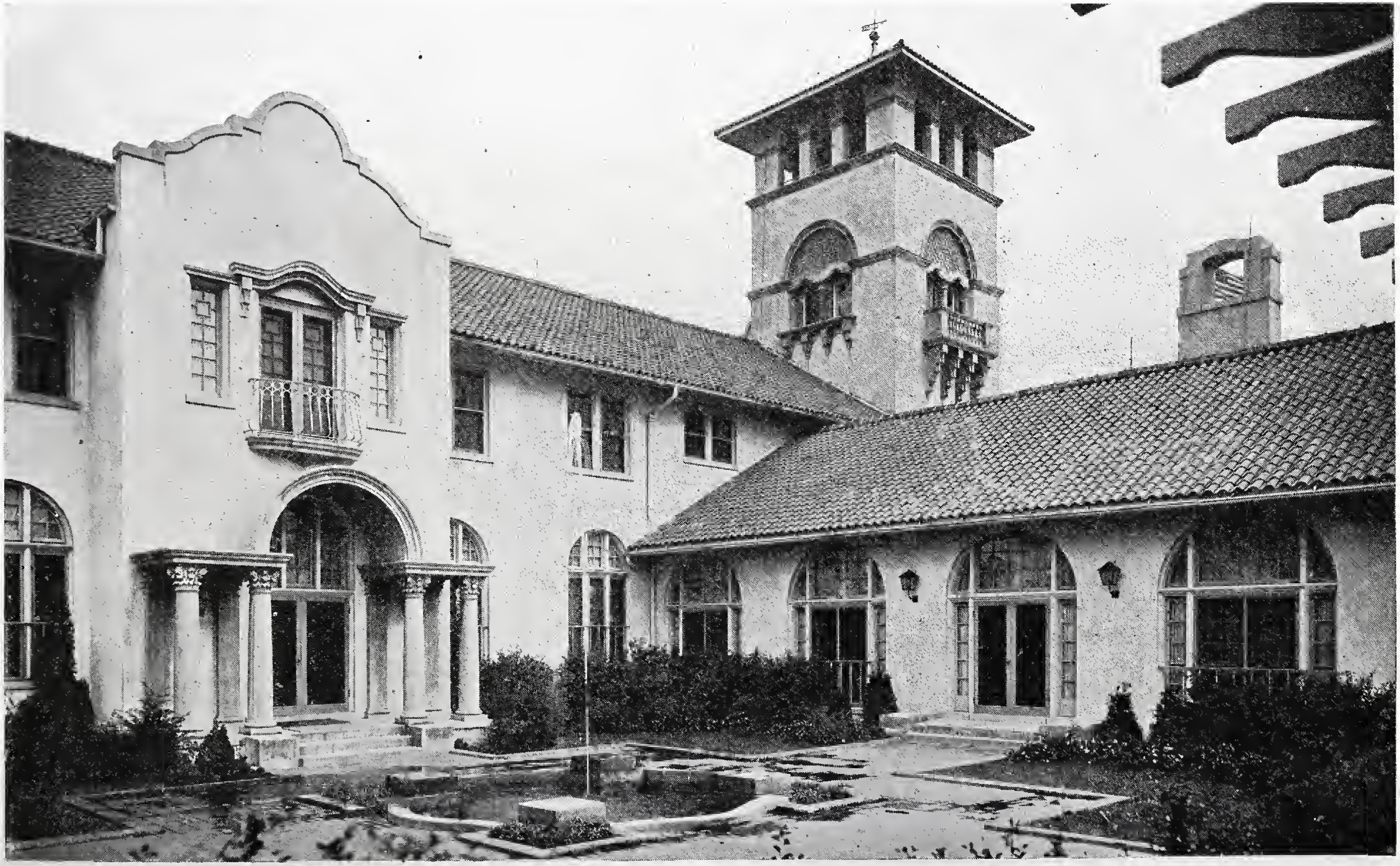
LIVING ROOM—RESIDENCE OF F. F. PEABODY, ESQ.,
MONTECITO, CAL. FRANCIS T. UNDERHILL, ARCHITECT.



DINING ROOM—RESIDENCE OF F. F. PEABODY, ESQ., MONTECITO, CAL.
Francis T. Underhill, Architect.

forget the seductive natural suroundings. This house of Mr. Peabody gives one a very and unusual sense of having been designed and built into the landscape. In examining the photographs the reader will remark how insistently and ingeniously the success of the plan depends upon the relations with the natural environment or contributions made by it. The patio or court, for instance, is designed around and made by a superb live oak. One is always looking beyond the building to distant hills. Even the entrance, which follows the Spanish tradition in presenting a wall of masonry, very economically ornamented, and broken by the fewest possible openings, loses much of its severity by the planting of exotic shrubs and trees against and alongside of its plain surfaces. It is a home designed by a man who is possessed, perhaps almost obsessed, by the California landscape, trees and atmosphere.

In his adaptation of the traditional Spanish type to the needs of a modern American household Mr. Underhill is as far as possible from being pedantic or archaistic. He has broken his wall spaces whenever convenience of the occupants of the house demanded. Indeed, the rear of the building is all windows and doors, and, taken by itself, would not encourage an observer to suspect a Spanish rather than a French origin. But the treatment of the entrance façade, the court and the interiors possess to the full the mixture of substantiality and severity with urbanity which is a peculiar characteristic of the Spanish domestic architecture in America. Of particular interest in this respect is the design of the dining room and the living room. The walls of these interiors are almost devoid of mouldings and wooden veneering, and depend for their effect upon plain wall surfaces, unrelieved except with hangings, furniture and a few pictures. In the interiors, as in the other parts of the building, Mr. Underhill is to be congratulated upon the sincere feeling and the distinction which he brings to his work.



PATIO—RAVISLOE COUNTRY CLUB, HOMEWOOD, ILL. GEORGE C. NIMMONS & CO., ARCHITECTS.

THE
RAVISLOE COUNTRY CLVB HOMEWOOD, ILLINOIS

GEORGE C. NIMMONS & CO., ARCHITECTS

By
PETER B. WIGHT

THE new buildings of the Ravisloe Country Club were completed last spring from the plans of George C. Nimmons & Co., of Chicago. The Club grounds are at Homewood, twenty-three miles south of Chicago, where the prairie has an undulating surface and was once considerably wooded. They have been sixteen years in cultivation and the turf is, for the most part, in splendid condition, but is still being improved, because this is essentially a golf club. The new buildings harmonize excellently with the landscape. In their general appearance they strike the visitor as being decidedly Californian; and that does not necessarily mean that they are modeled either on Mission or Spanish precedents, for they are strikingly original, and, whatever impression they give, a close inspection shows that they have no copied ornaments, and, altogether very few, displayed only at the several entrances and on the tower.

One reason for the Californian impression is the material used, which has been more extensively employed on the Pacific Coast than in the Middle West; namely, hollow building tiles with rough stucco finish. It is true, the greater number of the California "Mission" buildings are not made of such a permanent, substantial and fireproof material as hollow burned clay tiles. For the earliest of them were but flimsy imitations of the adobe buildings erected by the padres and their Indian converts; they were executed with plastered wire lath on wooden frames, just as we in the East build inside partitions. This could be done with safety where there was no danger from frost and where it was only necessary to provide against rain and the hot summer temperatures. However, the Californians were quick to discover that the hollow building tiles, plastered with Portland cement, were most appropriate for use in the best class of buildings, and they were the leaders in the study of various methods of using the cements for external finish, and gave us the "pebble dash," of which there are several kinds, and which has proved the best method for finishing off the exteriors of hollow tile construction.

The Ravisloe Country Club is entirely constructed, both as to its exterior and interior walls, with hollow building tile, and no improvement could be suggested in the white cement finish of its outside walls. It is said that crushed white marble has been mostly used as the aggregate. Thus the building is very safe against fire, the floors being of concrete and tile with standard reinforcement. The roofs only are of wood and, except over the surrounding porches, are visibly trussed and covered with heavy planking, without suspended ceilings, and covered with red Spanish tiles. The overhanging eaves are without ornament or attempt to make them show as cornices and are edged with simple half-circle metal gutters. All gables are carried up above the roofs and coped with solid concrete blocks. The entrances are all decorated with solid cast concrete and are excellent examples of that kind of work. All of this ornamental work is in solid blocks and set in place—not "stuck on." The same may be said of all window sills, cornices, and string courses. They are made with smooth surfaces and sharp arrises, with a cement which gives a slight rose color, contrasting with the rough finish on the walls.

The entire interior of the building is finished with a simplicity of good taste which is often missed in such buildings. There is no cellar, and all of the floors are finished with concrete.

As we approach the building from the railway station we first see the old building, which has been used for many years, behind a picturesque revetment of loose rocks. Then we pass around to the left and soon have a view of the whole group of new buildings, the tower being the central feature. Then, still continuing around to the left, we have a near view of the tower from the southeast. There is no planting on the south side of the clubhouse, because it is desired to preserve a full view of the golf course from the south and west windows and porches; nothing except a few of the original trees which are too high to obstruct the view. But it is expected that the exterior walls will be enriched by climbing vines, which are already planted. Another view of the entire group is to be had from the northwest. A garden occupies the space between the main building and the old building, which is used for the men's and boys' lockers, baths and dressing rooms, with other conveniences for the male sex, including a buffet. This will be used in winter, for the golf fans will not forego the privilege to play in the snow. The pergola, shown on the ground plan, connecting the main building with the men's building, has not yet been erected. A double row of Lombardy poplars has been planted on both sides of it, and, if they answer the purpose of protection to the walk, the pergola may not be necessary. The swimming pool in the garden has been only partially excavated and was planted with flowers during the past summer. It is designed for outdoor swimming and is handily reached from the dressing rooms and lockers for men, women and children in both buildings.

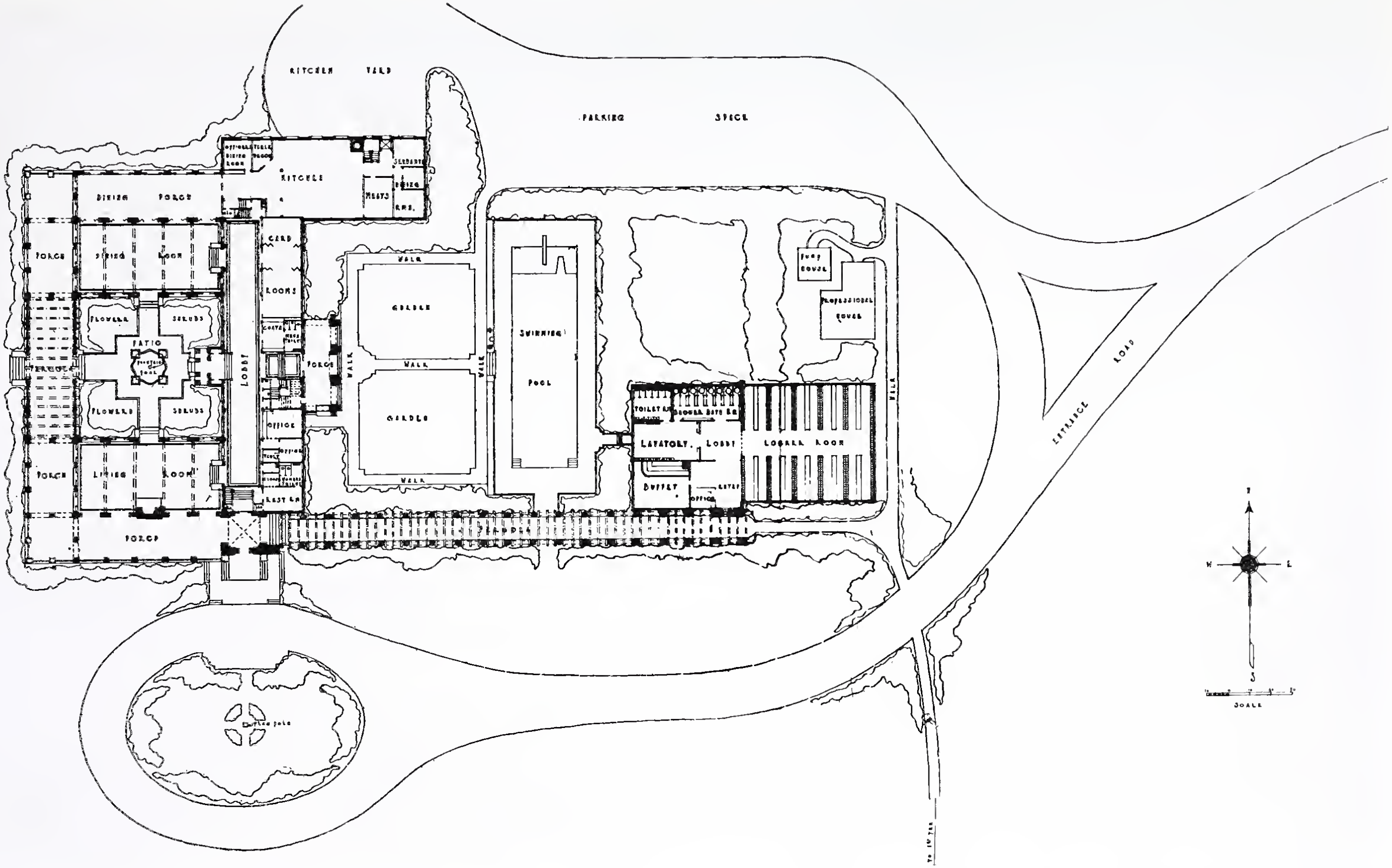
A view of the patio from the northwest is reproduced. Here the west entrance to the corridor is seen. It is built of solid concrete blocks, the roof consisting of two slabs, each supported by two columns and two pilasters, and a central arch built of blocks not covered with any protection from the weather. It will furnish a severe test of the utility of concrete blocks during a winter exposure, and its success will be watched with interest.

The principal requirements for the main building of the Ravisloe Club consisted of a living room or lounge, a dining room, porches, a lobby, offices, cloakrooms, toilet rooms, cardrooms, private dining rooms, and a kitchen on the ground floor, and a complete locker department for women and girls in the second story. The long lobby serves to connect the farthermost rooms on the adjacent sides of the court. This lobby is very desirable for practical reasons: it not only furnishes an attractive promenade and assembly space for the members, but it also gives opportunity to get good outside light and ventilation for the offices, coatrooms, toilet and other appointments needed. The low ceiling is formed in the shape of groined arched vaulting, with iron burring plastered.

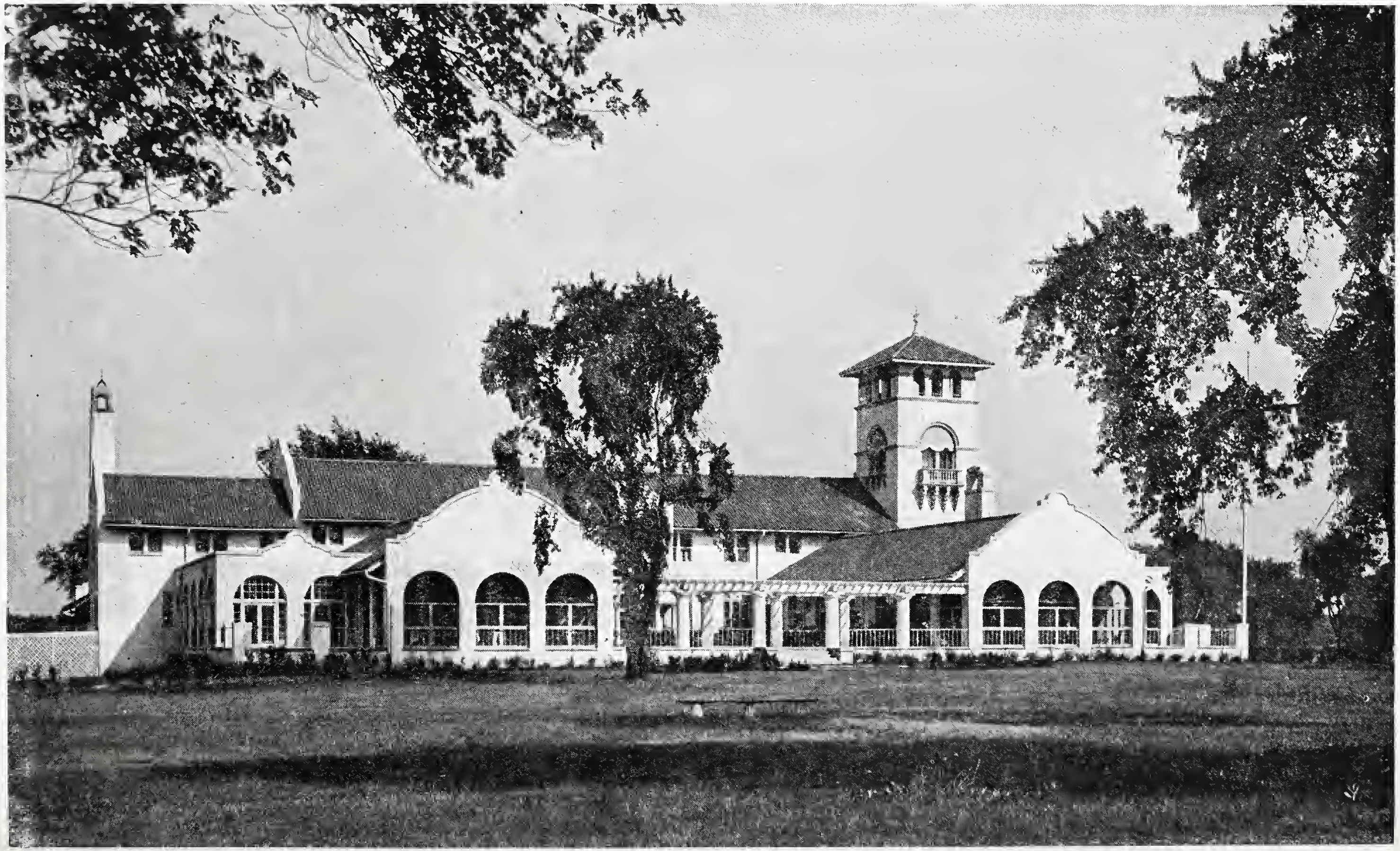
The lounge, or living room as it is called in the plan, is placed along the south side of the patio and has next to it two cloister approaches commanding a view of the golf course; that is, of the first tee, or starting off place and the eighteen green or finishing hole of the course. These two features of the golf course are always the most important ones and should always be in direct view of the verandas of the clubhouse.

The main dining rooms, with their dining porches, are on the opposite side of the patio and have access to the kitchen service, which is drawn back to the rear of the building and forms a part of a second large open garden court. The kitchen service building is large in proportion to the size of the dining room, but the demands for service are occasionally so great that extra space and provision in the kitchen are absolutely essential.

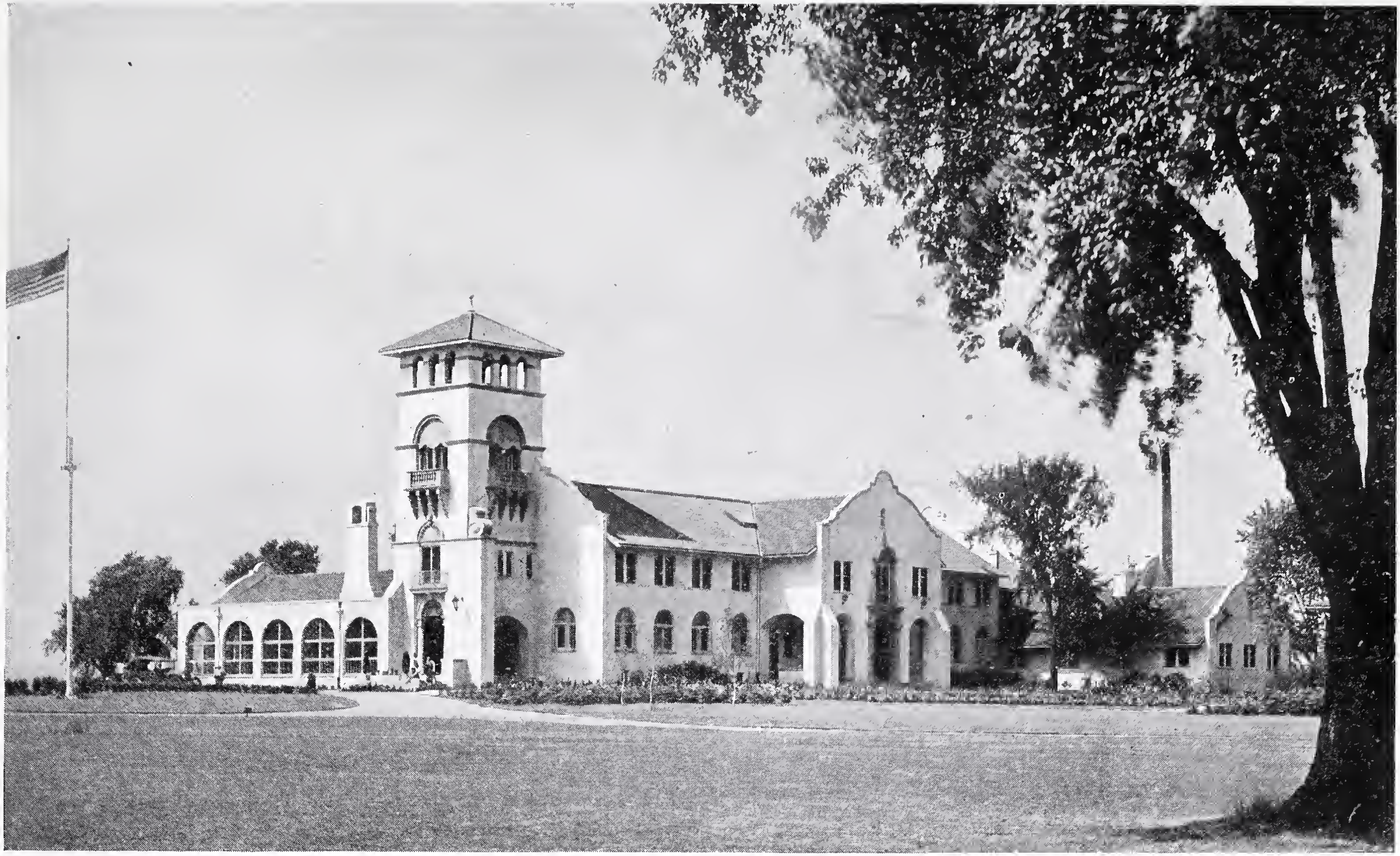
The second story part of the main clubhouse is given over entirely to the women and girls' locker department. The lockers are of steel, arranged in alcoves, and there are provided all sorts of accommodations in the way of shower and tub baths, dressing rooms, restroom, etc. The manager of the club has his apartment over the front end of the kitchen service building.



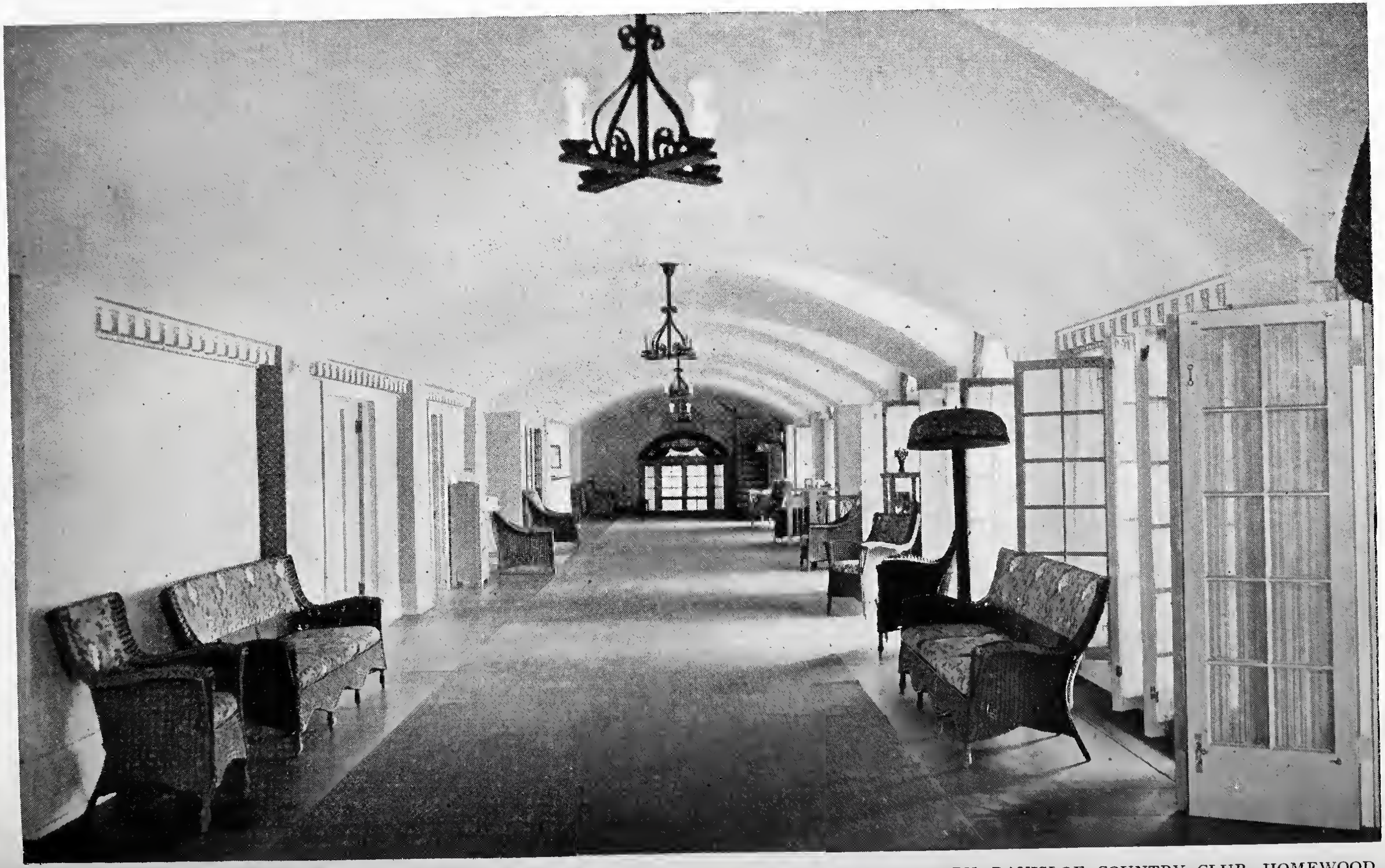
GROUND PLAN—RAVISLOE COUNTRY CLUB, HOMEWOOD, ILL. GEORGE C. NIMMONS & CO., ARCHITECTS.



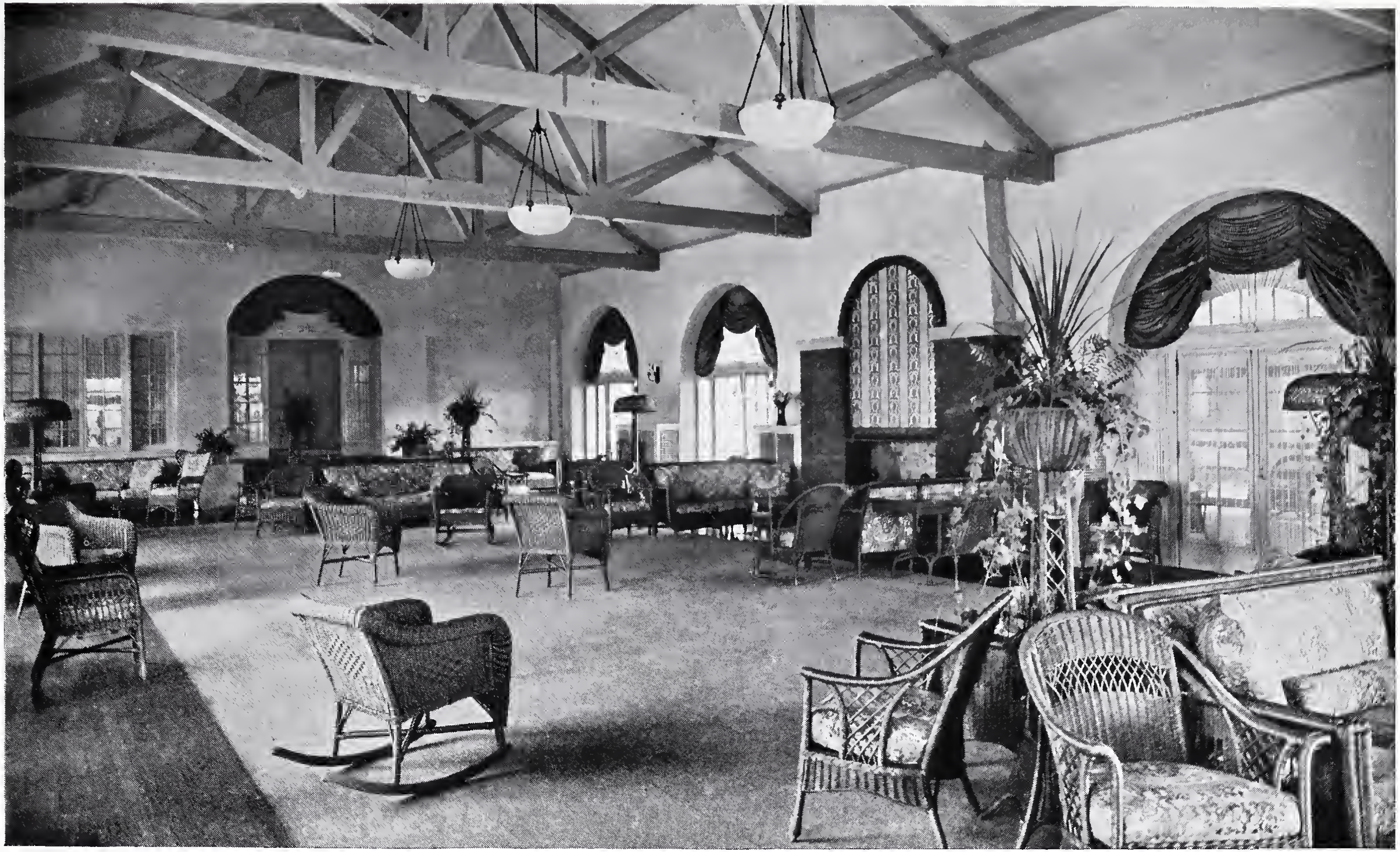
VIEW FROM THE NORTHWEST—RAVISLOE COUNTRY CLUB,
HOMEWOOD, ILL. GEORGE C. NIMMONS & CO., ARCHITECTS.



VIEW FROM THE SOUTHWEST—RAVISLOE COUNTRY CLUB,
HOMEWOOD, ILL. GEORGE C. NIMMONS & CO., ARCHITECTS.



LOBBY—RAVISLOE COUNTRY CLUB, HOMEWOOD, ILL. GEORGE C. NIMMONS & CO., ARCHITECTS.



LIVING ROOM—RAVISLOE COUNTRY CLUB, HOMEWOOD, ILL. GEORGE C. NIMMONS & CO., ARCHITECTS.

In the tower are a children's playroom, a restroom and an observation room at the top. This provides a cool and attractive place where members may go to get a commanding view of the entire grounds.

Mr. Nimmons has had a large experience both as a clubman and as architect for country clubs, in their management and construction. In a recent conversation on this subject he expressed himself as follows:

"When golf took hold of the men of this country it did not at first interest the women or children in an equal degree, because there was nothing for them to do if they did not care to play golf, and there were no particular attractions or adequate accommodations at the clubhouse for them. The result was that many a young family experienced domestic difficulties, sometimes of a serious nature, when the head of the house made a custom of spending his holidays and Sundays playing golf. All that is changed now. It has become a well recognized fact that no country club can attain any substantial degree of success unless it adopts and carries out the broad policy of providing entertainment and attractions for the entire family.

"The game of golf has entered into the life of the American people as no other sport or recreation, because beyond question it has done more to improve health than anything else yet discovered in the way of amusement or recreation. There are now over a million people playing golf regularly in this country.

"The architectural problem of the clubhouse has therefore become a most interesting one to architects. The progress made in its solution has not yet gone very far when one considers the extent to which country club life may be developed. Apparently every nation developed some form of sport or recreation to a marked degree. Rome had its baths and Greece its Olympic games. It looks as if the country club, with golf as the principal sport, is to be a highly developed and characteristic institution in America."

The country club of today, he concluded, must not only provide for all the necessities and requirements of going into the country to play golf and practice other outdoor sports, but it must provide also for the entertainment and social life of all members of the family, including the younger children.

The PHI DELTA THETA CHAPTER HOUSE AT THE UNIVERSITY OF CALIFORNIA

JOHN REID JR., ARCHITECT

By

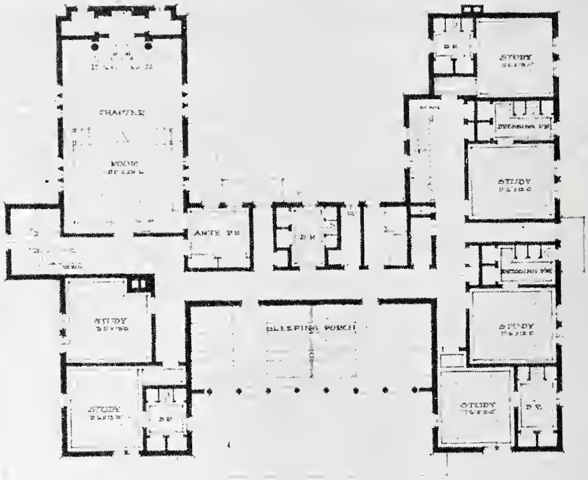
V. H. HENDERSON

EACH year one of the Greek letter fraternities at the University of California turns over its chapterhouse to the football squad to be used as a training house for the weeks before the "Big Game." When the new chapterhouse designed by John Reid, Jr., the San Francisco architect, for the University of California Chapter of Phi Delta Theta was completed it was picked out by the football players as their temporary home, because they regarded it as far more conveniently and agreeably arranged for student life than any other of the houses possessed by the seventy different fraternities and house-clubs at the University of California.

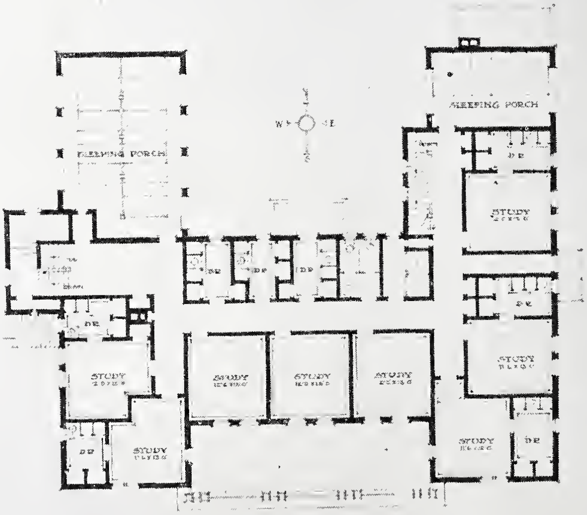
The particularly novel detail of the planning of this chapterhouse is that each pair of men share between them a study and an adjoining dressing room with washstand, mirrors conveniently arranged for shaving by natural light, and an ample equipment of built-in furniture for the keeping of clothing and other personal effects. There are no bedrooms—the entire chapter, in peace times normally of about thirty resident men, sleeping out-of-doors on one or the other of four different sleeping porches. These sleeping porches are used summer and winter, rain or shine, the whole year round, to the very great advantage in health, comfort and contentment of the members of the chapter.

The chapterhouse is picturesquely situated on rising ground north of the University campus, and looking out into a fine grove of eucalyptus trees, past "Founders' Rock," and toward the Sather Campanile. It has also a very beautiful view of the whole San Francisco Bay region. The house is of cement plaster and is roofed with heavy red Mission tile. The library and the living room open on one side into a long foyer, through which access is gained to the dining room; and on the other side by French windows, on a broad, tiled terrace. The building is heated by an oil-burning furnace. A convenient feature is a large locker room and shower in the basement, adjoining the billiard room, which furnish dressing accommodations for athletic or other purposes to members of the chapter who live at home or elsewhere than in the chapterhouse itself.

In the library is a memorial tablet, on which record is made in gold letters, at intervals of six months, of the class numeral of the class the members of which in the chapter made the best record in scholarship during the previous half-year. This has proved a stimulus to good scholarship, since men without particular ambition for scholarly distinction for themselves will struggle manfully for the glory of the class of which they are members.

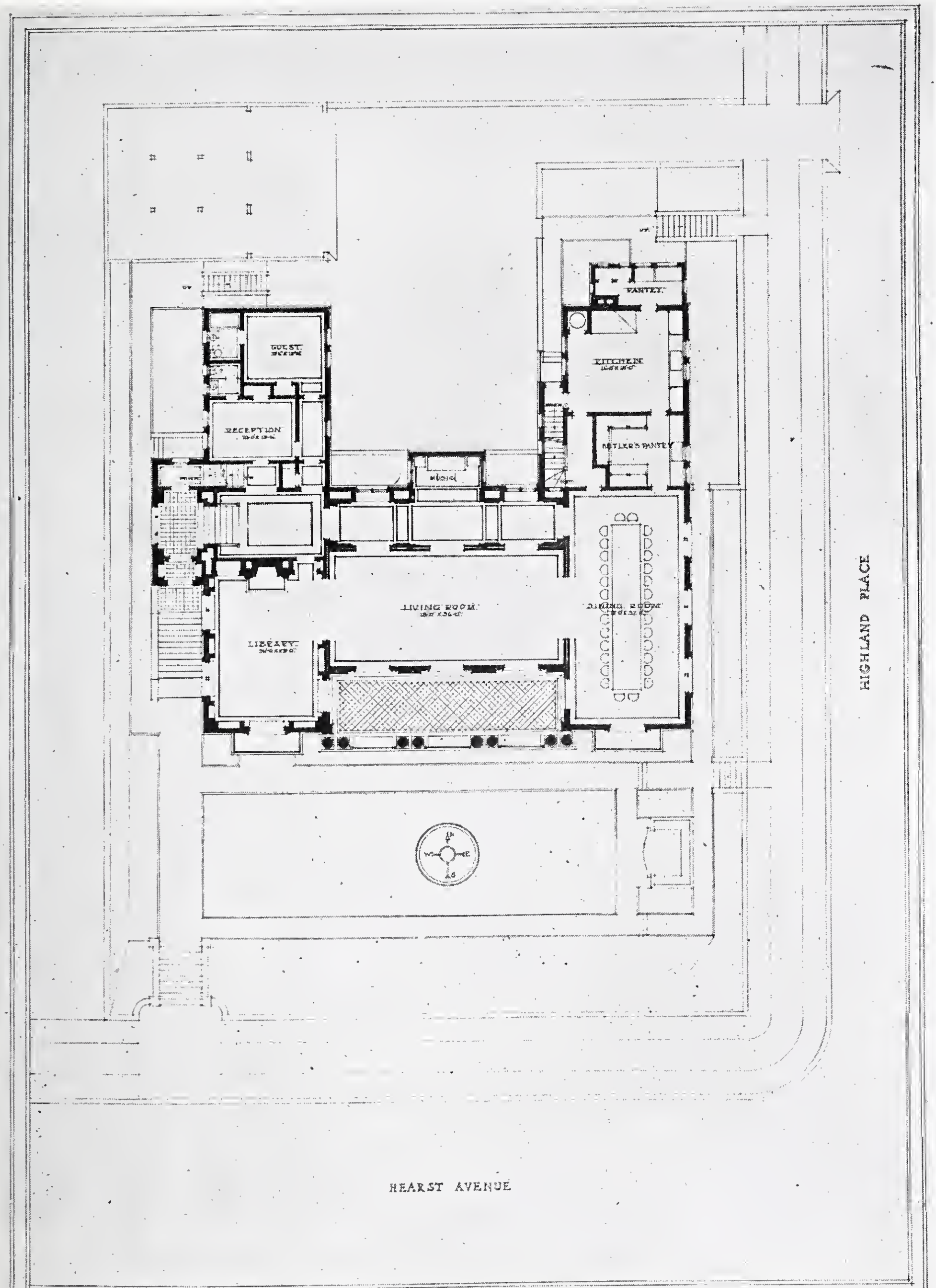


THIRD FLOOR PLAN

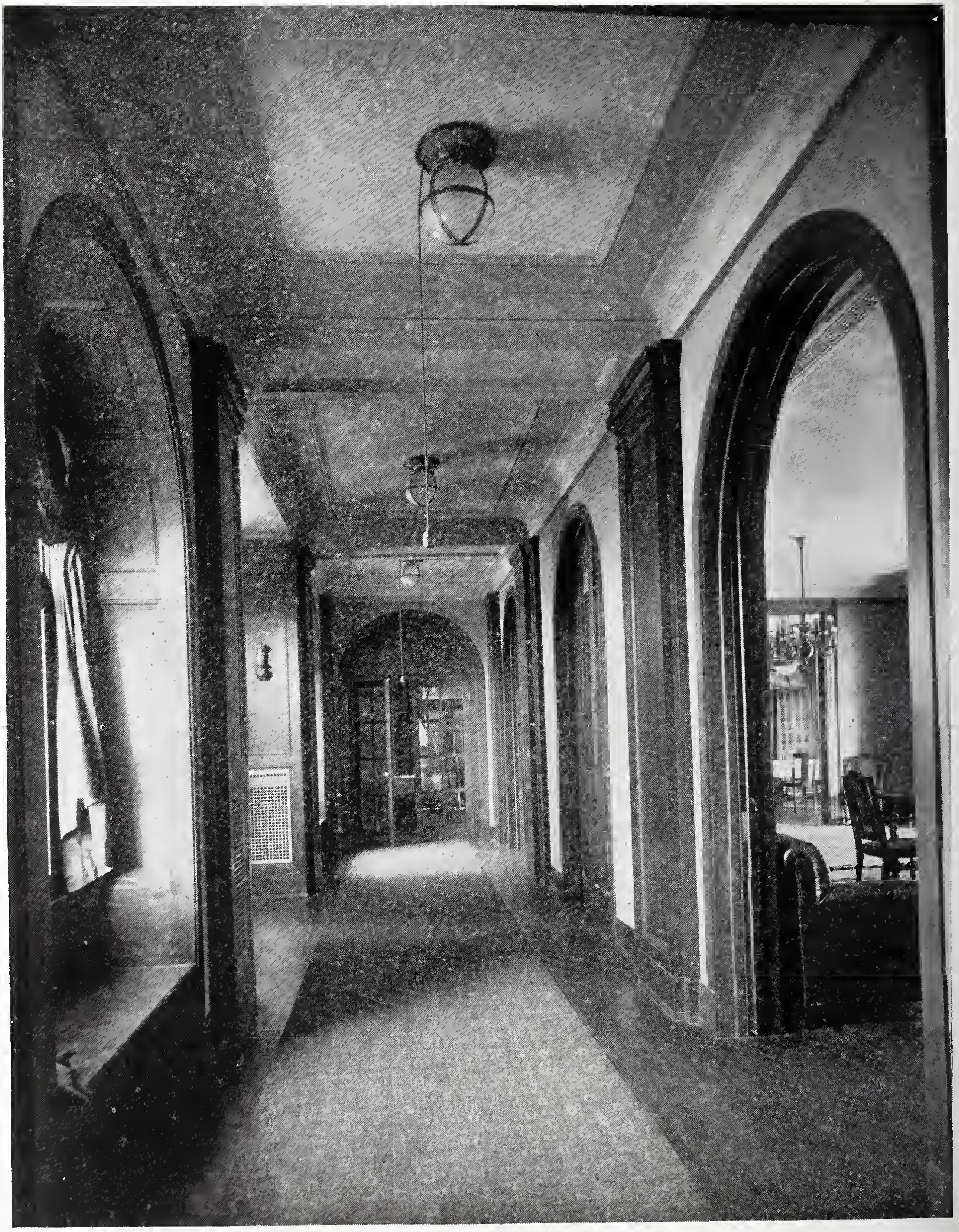


SECOND FLOOR PLAN

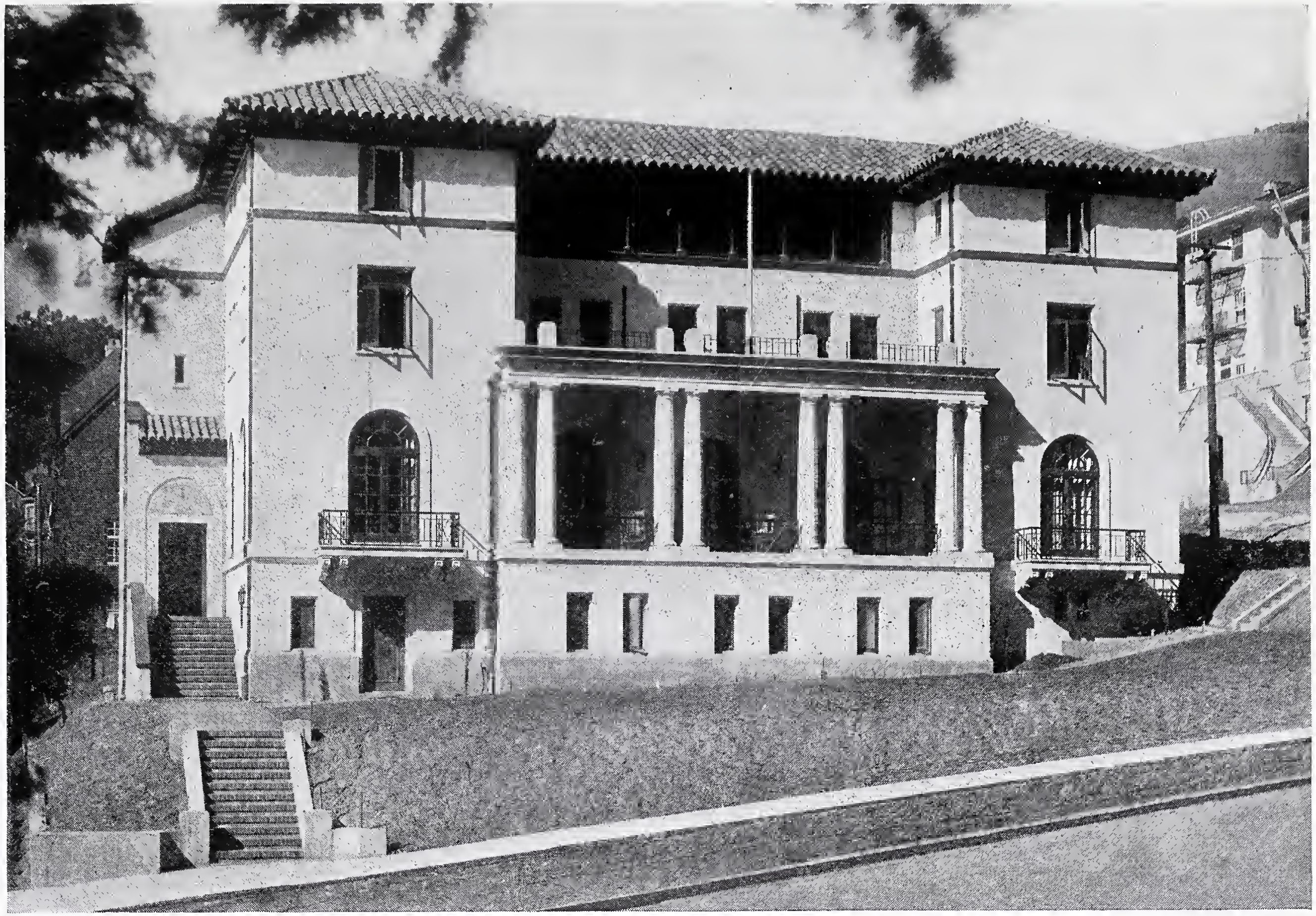
SECOND AND THIRD FLOOR PLANS—PHI DELTA THETA CHAPTER HOUSE, UNIVERSITY OF CALIFORNIA. JOHN REID, JR., ARCHITECT.



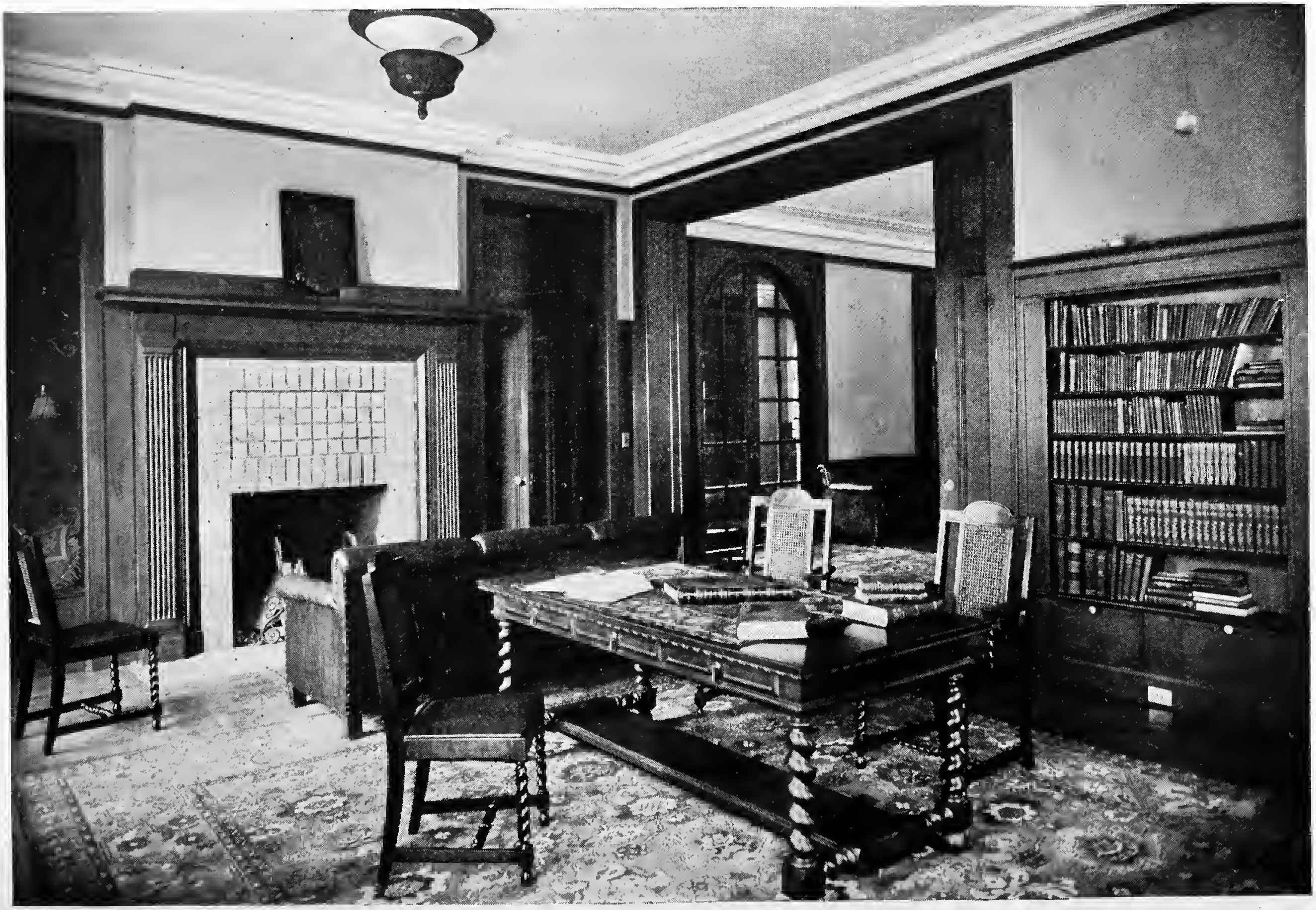
GROUND FLOOR PLAN—PHI DELTA THETA CHAPTER HOUSE, UNIVERSITY OF CALIFORNIA. JOHN REID, JR., ARCHITECT.



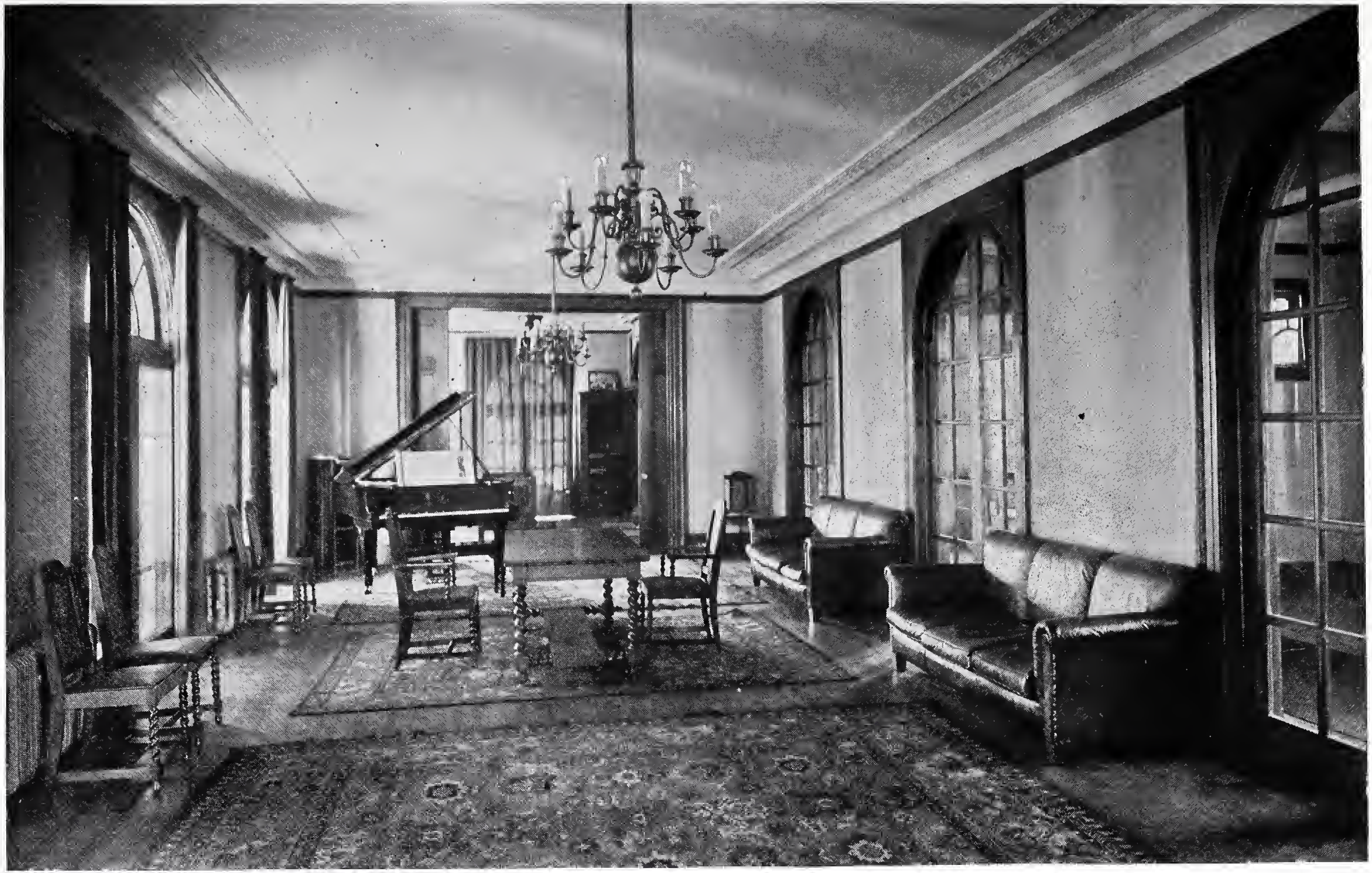
FOYER—PHI DELTA THETA CHAPTER HOUSE, UNIVERSITY OF CALIFORNIA. JOHN REID, JR., ARCHITECT.



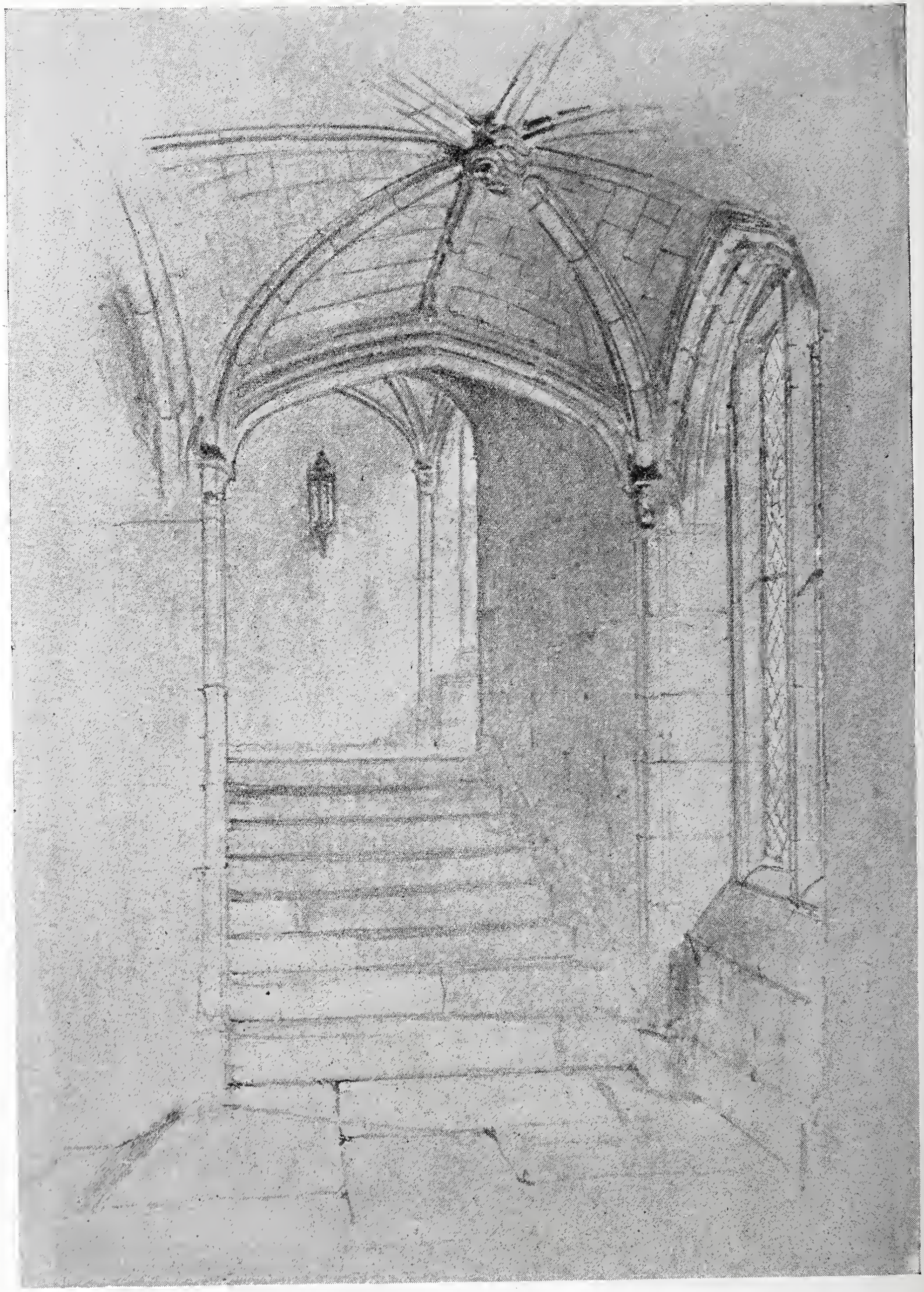
PHI DELTA THETA CHAPTER HOUSE, UNIVERSITY
OF CALIFORNIA. JOHN REID, JR., ARCHITECT.



LIBRARY—PHI DELTA THETA CHAPTER HOUSE, UNIVERSITY OF CALIFORNIA. JOHN REID, JR., ARCHITECT.



LIVING ROOM--PHI DELTA THETA CHAPTER HOUSE, UNIVERSITY OF CALIFORNIA. JOHN REID, JR., ARCHITECT.



DRAWING BY OTTO R. EGGERS.

OTTO R. EGGERS

Architectural Renderer & Designer

By

JOHN TAYLOR BOYD, JR.

THOUGH the architectural profession is mainly interested in the craftsmanship of those of its members who maintain their own offices and whose work appears under their own names, it may occasionally take note of that of some of the younger architects who, acting as assistants in the larger offices, do so much to interpret the ideas of their chiefs in the successful execution of designs. One of this group of younger men is Mr. Otto R. Eggers, six of whose water colors are being used as covers for the Architectural Record; the first of the series having appeared in the January issue.

His associates know Mr. Eggers as the assistant of Mr. John Russell Pope—ably supporting him in upholding that distinctive personal style and that very high standard of good taste achieved through a period of years by Mr. Pope. In fact, not only has Mr. Pope developed his striking style, but it might almost be said that he has developed Mr. Eggers to help him carry out his style. Most of Mr. Eggers' practical training in design has been received in Mr. Pope's office, and he has naturally arrived at a rare sympathy and understanding of the latter's architectural desires. Mr. Pope seems to have solved most fortunately that hard problem of a busy architect—to find a workable office system. He has placed Mr. Eggers in entire charge of the design in the drafting room. All questions of the drafting room come through Mr. Eggers to Mr. Pope, who does not criticize directly the work of the various draftsmen. The principles of this method of organization, including business management, are explained in a series of articles written by Mr. Daniel Paul Higgins on the "Business of Architecture" in the Architectural Review of 1916 and 1918. It may be pertinent to call attention here to an important feature of this organization—the supervising architect. He is the one who oversees the construction itself and who makes sure that the designs are properly rendered in materials and colors and textures, replacing thus a group of superintendents or clerks-of-the-work, who are too often unsympathetic or uneducated in the refinements of design, and who may lose much of the artistic quality of an architect's conception when they execute it in the materials of building.

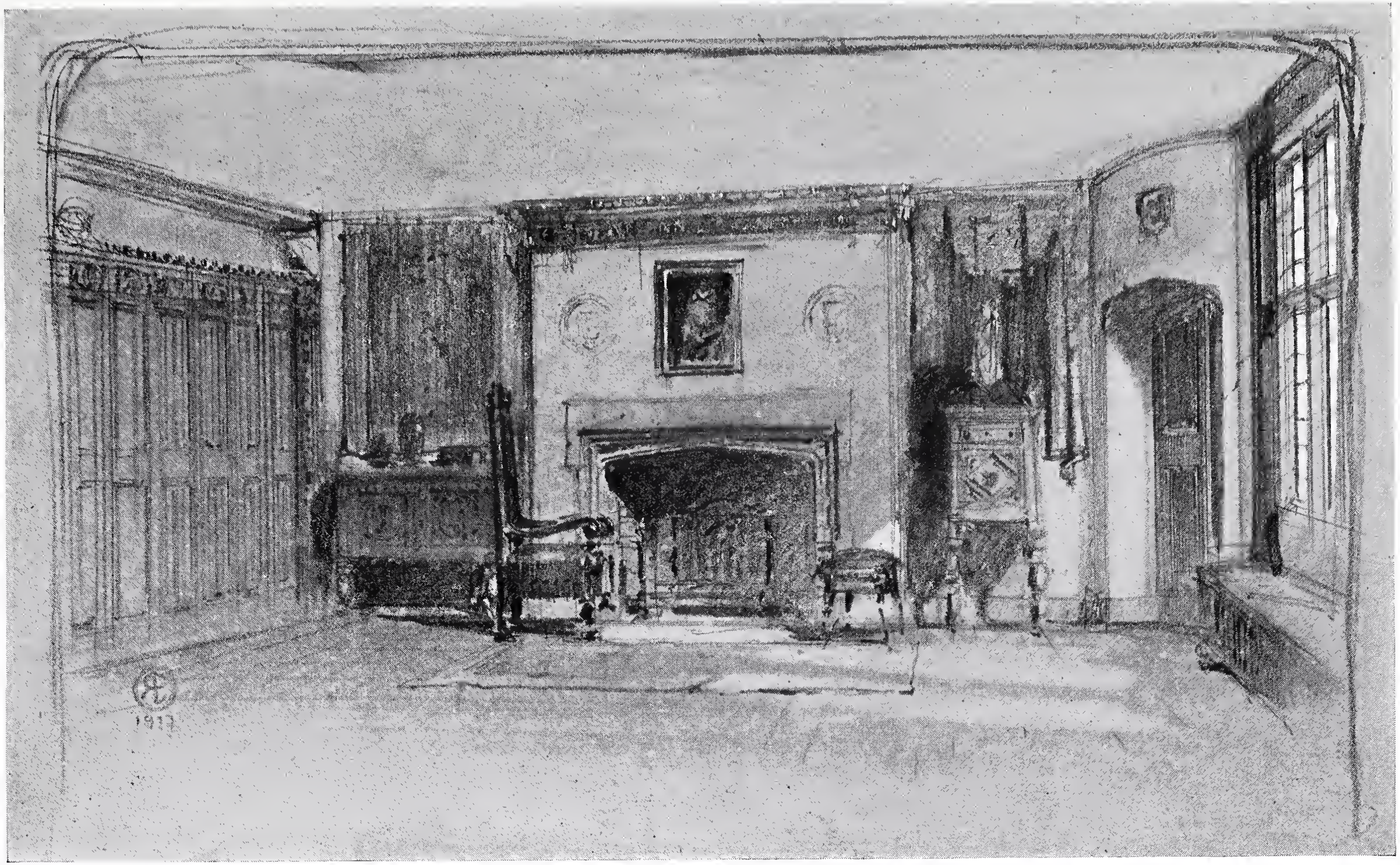
Mr. Eggers had shown marked ability as a young draftsman before he came to Mr. Pope. His first training was in the atelier of Mr. Hornbostel, where he came into contact with the vigorous, fundamental conceptions of architecture of this well-known teacher. He then spent some further time in office work under Mr. Egerton Swartwout, one of the ablest draftsmen in the United States; after which he went into Mr. Pope's employ. Meanwhile he had won second place twice in the Paris prize, and in Mr. Pope's office he won the Le Brun scholarship. It was on a trip south from Paris as holder of this scholarship that Mr. Eggers painted the water colors now appearing on the Architectural Record covers.

It will be seen that Mr. Eggers has been rarely fortunate in his training. It is in Mr. Pope's office that he has done most of his work, and he has matured in the latter's style, with which he shows so complete and so apt a sympathy. As each new project comes into the office it is the custom of Mr. Pope, after a careful study of the needs of the client, to outline his ideas orally and with sketches to Mr. Eggers, who gives them more completely definite form in a finished perspective sketch—a "sketch" so thoroughly and so realistically conceived that it might almost be taken for a photograph of the finished work. These preliminary sketches are thus entirely different from the too usual vaguely rendered drawing of a design that is itself not fully worked out in the architect's mind. This method of Mr. Pope and Mr. Eggers is not absolutely superior to all others, but it certainly facilitates the progress of the design, and it must prove comforting to those for whom the building is projected, as they are never in doubt as to just how the structure will look. When one is told that in one or two instances preliminary one-eighth inch scale drawings made by Mr. Eggers have actually been used for working drawings, one will derive some conception of the fidelity of their execution. Besides these carefully prepared perspectives of exteriors, Mr. Eggers is accustomed to draw up many sketches of interiors, carefully rendered in pencil.

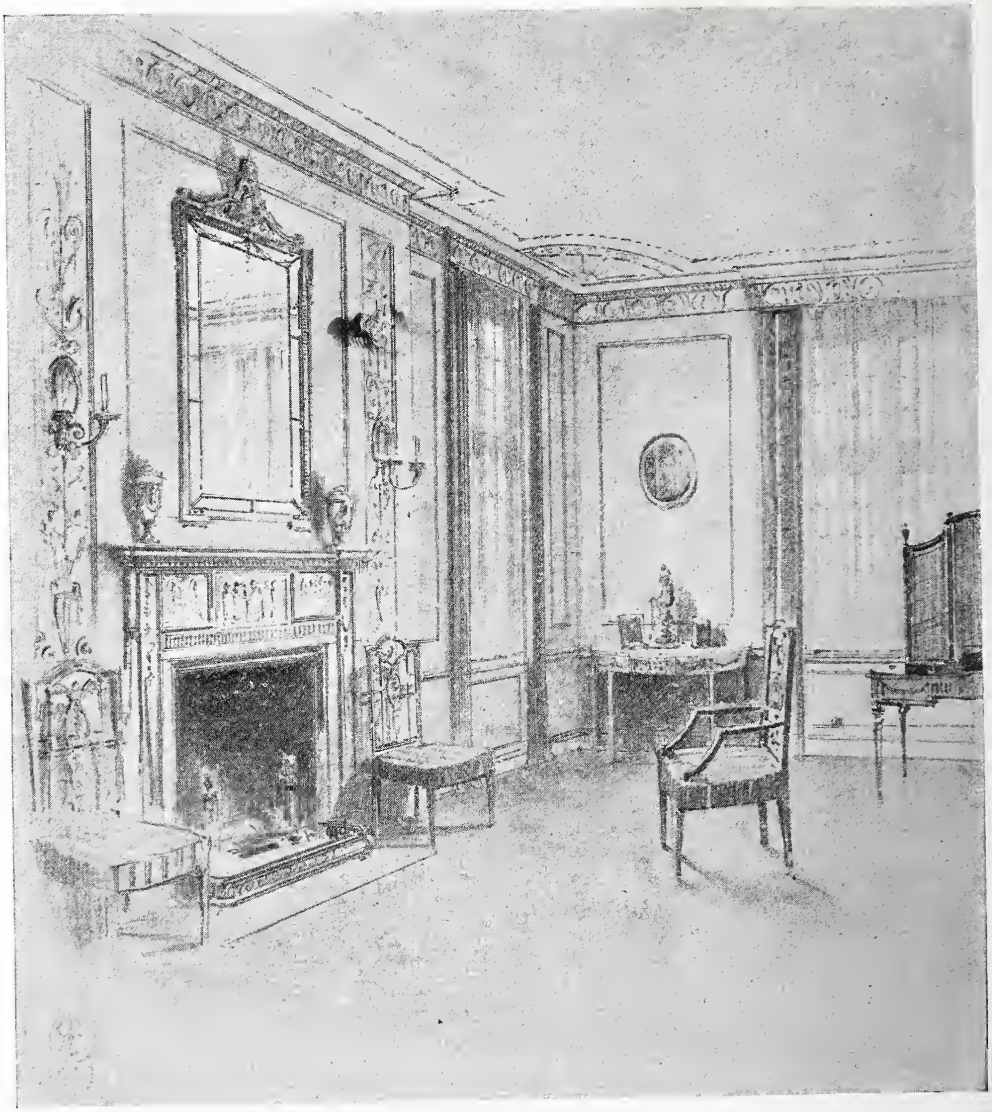
A few of his sketches are shown in these pages. Their freedom and ease of delineation will surprise those who are familiar with only the more precisely executed renderings in color by Mr. Eggers. It is unusual to find a draftsman who is at once master of a technique of most painstaking mechanical delineation—for a special purpose, as we have seen—and of the free, sympathetic way of the artist. Mr. Eggers has executed a number of large formal renderings for other architects. Of these the best known are his remarkable perspectives of the Washington Memorial by Mr. Swartwout, and the Lincoln Memorial by Mr. Pope—huge perspectives in bold masses of color, yet with a delineation of trees and building so minute that they will not suffer when seen a few inches away.

A word remains for the particular water colors that appear as the Architectural Record covers during the first half of the current year. They bring to mind the difference between the attitude of the painter and the architect towards water color drawings. Whenever an architect undertakes painting, he must decide whether he will render the general impression of mass and form and especially of light and atmosphere and color, sacrificing and subordinating details to this strong unity of effect. This is the viewpoint of the painter. Or he may prefer to give accurate, even minute, description of details, some of which he may not even see but which his technical knowledge of architecture tells him are there. It should not be difficult to agree that this distinction between the painter's and the architect's way of painting is really an imaginary one, except in special cases. The painter's is the artist's, and the photographic paintings made by some architects are simply a method of showing clients graphically what they are to expect in their proposed buildings. They are a by-product of painting. In point of fact, it would be well if the architects would give themselves over completely to the artist's attitude, for, no matter how hard they may try, it is never likely that they will err on the side of John S. Sargent and be too neglectful of detail. Even in their own field architects too often lose themselves in contemplation of detail. In the present day designs it is often too evident that the author has been so afraid that his work will not be correct and well-mannered and smooth and perfected that he has allowed it to turn out dry and thin and overworked. Where is to-day the vigorous modeling, the splendid light and shade, the bold proportions of the front of the Boston Public Library in monumental buildings? Have we really gone ahead in the last ten years? A better understanding of the painter's breadth of view would correct many of the faults of contemporary architecture.

What is true of painting as a whole is particularly true of water color. Here many painters as well as architects have missed the point. Water color is a technical process that must be done quickly, in a few minutes, with the finished results obtained as directly as possible in one wash, and with the least amount of working over the wash in the drawing of details. When there are a succession



DRAWING BY OTTO R. EGGERS.

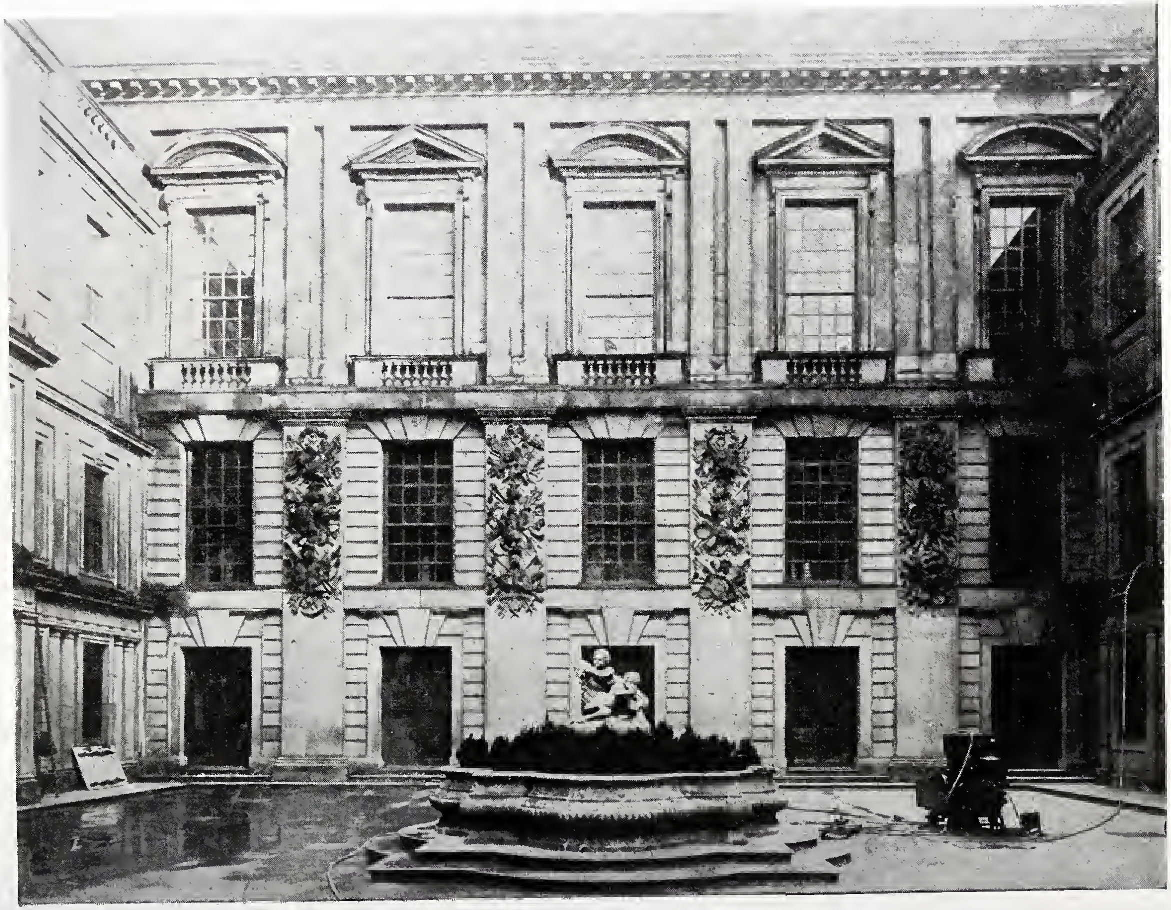


DRAWING BY OTTO R. EGGERS.

of washes and much stippling and brushing in of details all the virtues peculiar to water color are lost—I mean the transparency, the clearness, the brilliancy of color, and the striking unity of impression. Nevertheless, in any of the exhibitions, especially in the Water Color Society, one may see countless painfully and fussily made drawings, worked over, sometimes in Chinese white used as body color, until all their freshness has been lost. In short, painters have attempted to make water colors as much like finished oil paintings as possible. They recall the remark of Ruskin's about the nineteenth century painting of our present enemy—"the muddy struggles of the Germans." Up to a very recent time water color was rather in bad repute among the painters—along with color and imagination, be it said—but its value is coming to be appreciated again. The French understand it best, but in Sargent America quite holds her own. A Boston artist, Mr. Dodge MacKnight, has pushed the medium of pure water color as far as it can go, employing pure tube colors in great bold washes, big brush strokes used in the sweeping, instinctively expressive way of the Japanese—all in the most vivid renderings of light, on sea, on the snow, in the tropics. Among American architects, a small number use water colors excellently. To speak at random, the work of Mr. Edgar I. Williams, as a student at the Rome Acadamy a few years ago, attracted much attention. It was said of his work that it should have been hung in the painters' section of the exhibitions, and that some of the painters' work should be transferred to the architects' section. The covers used on the Architectural Record last November, painted by Mr. Leon V. Solon, and in September, painted by Arthur Byne, are fine examples of the proper conception of water color drawing.

The drawings of Mr. Eggers on the Architectural Record covers are highly capable examples of correct methods. At first sight it may seem that they are too detailed, but their realistic drawing is due to extreme accuracy, and closer examination will prove that much more is suggested than is drawn out. The one on the January cover, the famous Della Salute in Venice, recalls the work of the English water color school of the late eighteenth century, when details were more carefully suggested than they are now. This drawing of Mr. Eggers is one of the best, especially in color and in its sparkling effect of light. The reflections of the buildings in the water are excellently rendered; and the throwing of the foreground, palace and the gondolas into a strong shade broken up by the light on the mooring posts evidences an unusual grasp of pictorial composition in a young scholarship holder.

The water color of the Temple of Concord at Girgenti, on the February cover, is perhaps the surest and the freest of the series, done in great broad washes at one effort, with the barest possible working over for delineation. The scenes of the two Paris bridges, the old Pont-Neuf and the Pont Marie, are skillfully painted; how skillfully, will be realized by those who have attempted to render the dull atmosphere of Paris, devoid of bright color, but full of subtle, misty, colorful light. The painting of the sky of the Gothic church of St. Servan, Paris, is a most successful picturing of this evanescent light of France. As examples of the early work of an architect, even yet in the early part of his career, these drawings cannot be too highly considered. It seems hardly fair to point out that here and there in them may be bits that are too much worked up; for to-day, as many of his pencil sketches show, Mr. Eggers has attained to the freedom that comes of experience, and, if he were doing them now, he would doubtless do them even better—except the one of the Della Salute.



VIEW OF COURTYARD AT CHATSWORTH.
WILLIAM TALMAN, ARCHITECT. 1680.

English Architectural Decoration

Text and Measured Drawings by Albert E. Bullock

Part VI.

ARCHITECTURAL expression is not only the realization of the ideal of the designer, but a species of grafting certain forms in varied dispositions, based upon the principles dictated by previous experience. In this respect it is not unlike the practice of grafting adopted in horticulture, the results being more or less satisfactory in accordance to the degree of proportion and taste displayed in the development of the salient and essential features. The elimination of ornament or its chaste distribution contribute largely to the success of a scheme, whether it be external or internal work; and failures are frequently the result of inexperience in the use of the correct proportions for a given area. Take, for instance, the Vandyck or double cube room at Wilton. It may be thought to be over-ornamented because of the florid composition pendants; but these are subordinated to the immense size of the room and to the quiet color scheme of white and gold of the ornamentation, which has as its central feature a finely carved marble mantelpiece with superimposed figures in the composition of the overmantel. Moreover, the ornament, although similar in design, differs frequently in detail, giving an added interest.

In all the early periods of carved woodwork this variation of design in the ornament or carving is the charm of the subject. At Wilton, the eye travels round the paneled walls, seeing enrichment up to the cornice, and above a plain cove to an enriched ceiling of beam formation. (See inset drawing opposite page 488.)

There is a truthful expression in the ceilings designed by Inigo Jones, the construction being made obvious by the emphasis given to the main corniced beams. This is especially noticeable in the rooms at the Queen's House, Greenwich, and in the hall where the chief lines of the ceiling are reflected or correspond to the lines of the marble paving below. It is one of the essentials of successful interior decoration that the principal divisions of one wall should be adopted in the others; the horizontal moldings should carry the eye without break around the room, except where a columnar treatment is adopted, when the main cornice serves this purpose.

Good effects can be obtained by bold projections where a heavy style is adopted. Any indecision or bad modeling is immediately observable if the spirit of this principle is lost.

In lighter vein, for drawing rooms and bedrooms, any projections should be carefully studied, emphasis being confined to doors, windows and chimneypieces.

The work of Wren was always of bold character. Plastering was modeled in full relief, giving deep shadows; the carving being frequently very undercut with much variety in the design of the sculptural features which have the fullest possible projection. The better carvers were faithful to nature, portraying the finest detail and exhibiting a profound knowledge of anatomy.

The board room, or withdrawing room as it is sometimes called, of the offices of the New River Company, is one of the most notable of the Wren rooms in London, having very few modern additions and retaining much of its original character. The carving is the authentic work of Grinling Gibbons, and in masterly style, the chimneypiece being an exceptionally fine feature of the room. The ceiling is interesting in having the ornament colored in accordance with each particular object represented; while the purpose of the room is clearly indicated by small panels modeled to represent scenes on the New River, whence the supply of water to London is obtained The whole theme with its varied subjects is a unique example of studied and inventive design and consequently reflects great credit upon the originators.

The drawings which illustrate this room (see insets opposite page 392 of April issue) were kindly lent to the author by Mr. Frank Green, A.R.I.B.A., who made careful measurements in 1902 to 1906. It is an oblong room, lit at one end, being paneled in oak with the carved Royal Arms incorporated in the design of the chimneypiece, having in the ceiling plaques containing the arms of Alderman Greene and Sir Hugh Middleton, two of the founders. The work was executed in 1693 or late in the seventeenth century. The large oval in the ceiling contains the portrait of Middleton, being crowned by a seraphic subject in the manner of Verrio.

Painting had not attained a high degree of excellence at this time, the best work being done by Robert Streater, a disciple of Du Moulin, at the Sheldonian Theatre, Oxford. Streater was followed by Antonio Verrio, whose work at Chatsworth and elsewhere is familiar to many. The most notable painters that followed in their wake were Laguerre, Ricard and Sir James Thornhill, who were for the most part keen rivals, and of whom Thornhill was the most popular court painter, judging from the amount of work he executed. The paintings at Moor Park, Hertfordshire, were executed by Thornhill in company with Sleker and Amiconi for Sir B. H. Styles during the first half of the eighteenth century, the architecture being by Leoni, an Italian, who came to this country at the instance of the Earl of Burlington.

Streater, however, was contemporary with Wren and much employed by him. He painted the ceilings of the chapel at All Souls College and the New Theatre at Oxford, and in London the ceiling of the Banqueting House, Whitehall, St. Michael's, Cornhill, and much work at Kensington Palace, the latter being executed in 1692 at a cost of £3,599.

Streater was very extensively employed by the nobility, and is famous for his work of the Gyrants War executed for Sir Robert Clayton, which subject was subsequently removed to Marsden, near Godstone, Surrey.

Painting entered largely into ceiling design especially in Renaissance churches. The vestry of St. Lawrence Jewry, in the City of London, has a fine ceiling of the Wren period, and there are numerous examples all over the British Isles.

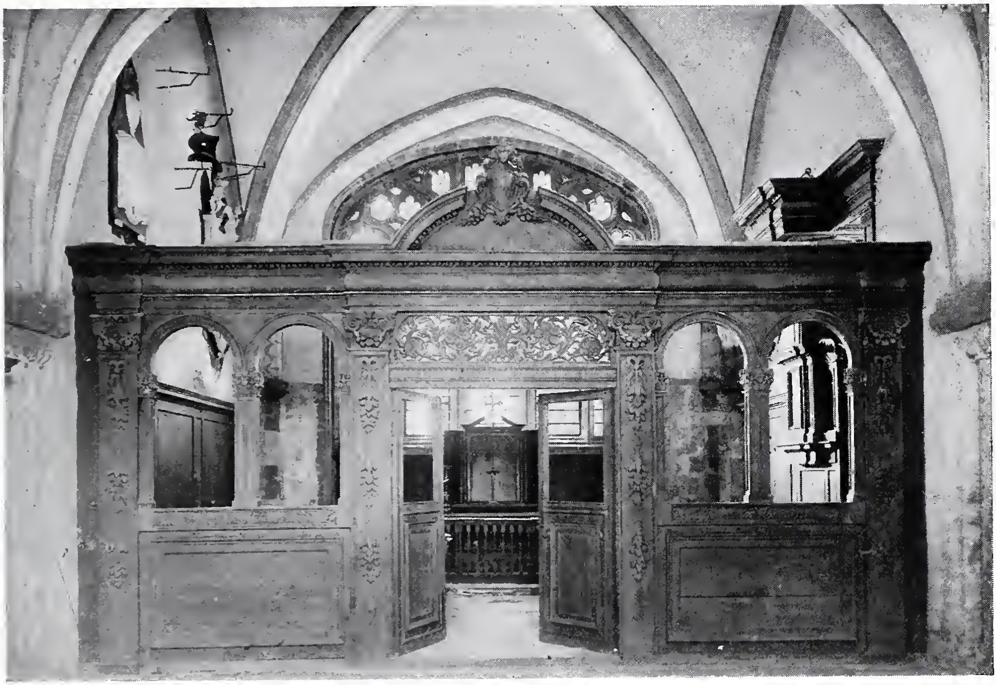
At Exeter there are several good Renaissance ceilings, most of which are earlier than the Wren period. Until quite recently there existed a fine ceiling with festooned surround at the old "Half Moon Inn," in High street, Exeter. The Customs House possesses two or three Charles II ceilings, and a large rich ceiling exists at Messrs. Green's premises in High street.

Ceilings of the period at Edinburgh were of a very high degree of finish and equal to those at Belton, much work being done in this locality by the Milne family, who for many generations held official positions as Supervisors and Clerks of Works to the City.

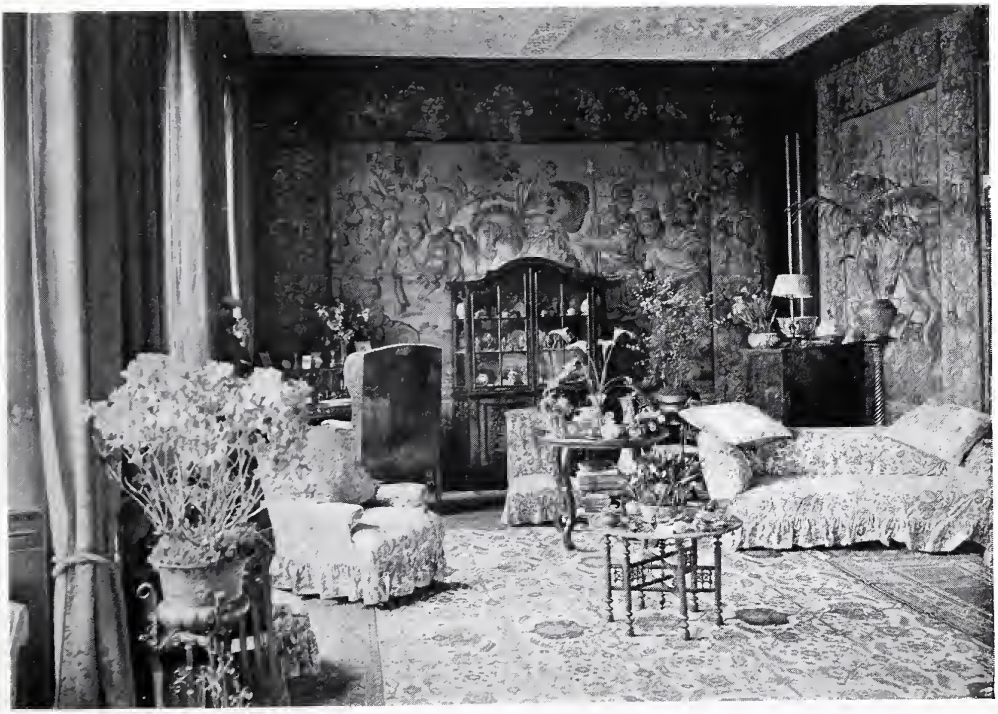
In Ireland there are several good instances of Wren period ceilings, especially in Dublin and Belfast. The Chapel ceiling of the Royal Military Hospital, Kilmainham, was erected in 1680 from designs by Wren and executed by Cipriani. Owing to the decay of the supporting timbers it was taken down at the beginning of the present century by George Jackson & Son, who faithfully reproduced the design, incorporating much of the original work. Parts of the original ceiling are preserved in the Technical Museum, Dublin.

In the Wren period the panels were large and the moldings bold, usually of bolection section for paneled work. In order to obtain this exceptional size for panels the boards were carefully jointed together, and the joints can be detected in most of the work of the time. There were two reasons for this, apart from the desire to obtain massive appearance: one was due to the difficulty of getting timber of a sufficient size without shakes, and the other on account of shrinkage.

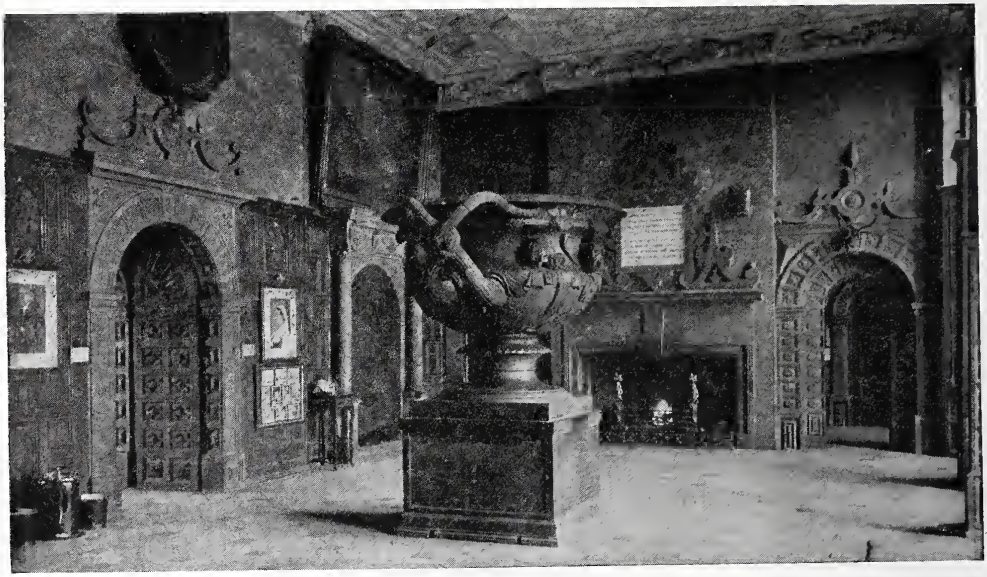
This eventually led to the habit of changing the grain for effect; then to



CHAPEL SCREEN—FORDE ABBEY.



TAPESTRY ROOM—FORDE ABBEY.



JACOBEAN ENTRANCE HALL—ASTON HALL, BIRMINGHAM.

quartering with pollarded and cross-grained cutting of hard woods; and finally to parquetry, which was a system of treating ornamental woods by inlaying sections as practiced in France by Boule, and subsequently in England by furniture joiners. The Chatsworth paneling is very rich in this method of pattern inlay, and there are many similar examples at Hampton Court Palace and elsewhere. Staircases reverted to the baluster form of handrail, but they were thicker and bolder in profile than adopted earlier in the century. Wrought iron handrailing and ornamental gates were used freely, fine examples of which exist at Belton and Hampton Court Palace. The original gates by Tijou are still preserved at Hampton Court, although they have suffered many vicissitudes. Staircase handrails became lighter during the early years of the eighteenth century, of which there are many instances extant.

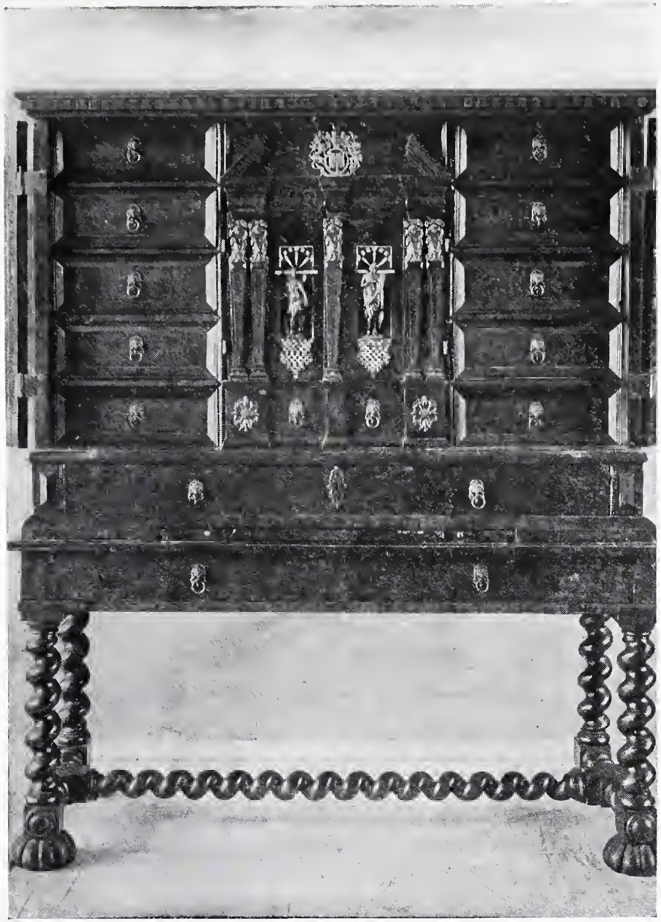
The Great House, Leyton, was built during the first quarter of the century for Sir Fisher Tench, Bart., having nicely molded balusters, two to a tread, with carved brackets to the cut string of more than ordinary projection. This house was demolished in 1904; but a monograph of it was previously made by the London Survey Committee, and is the fourth monograph of their publications. Incidentally it may be mentioned that the withdrawing room and dining room were of Adam period design, the other rooms being of the period mentioned above.

The old Ward School, Love Lane, is typical of the Wren treatment; the balusters are thick and bottle-shaped and the doorways on the landings pedimented with plain moldings.

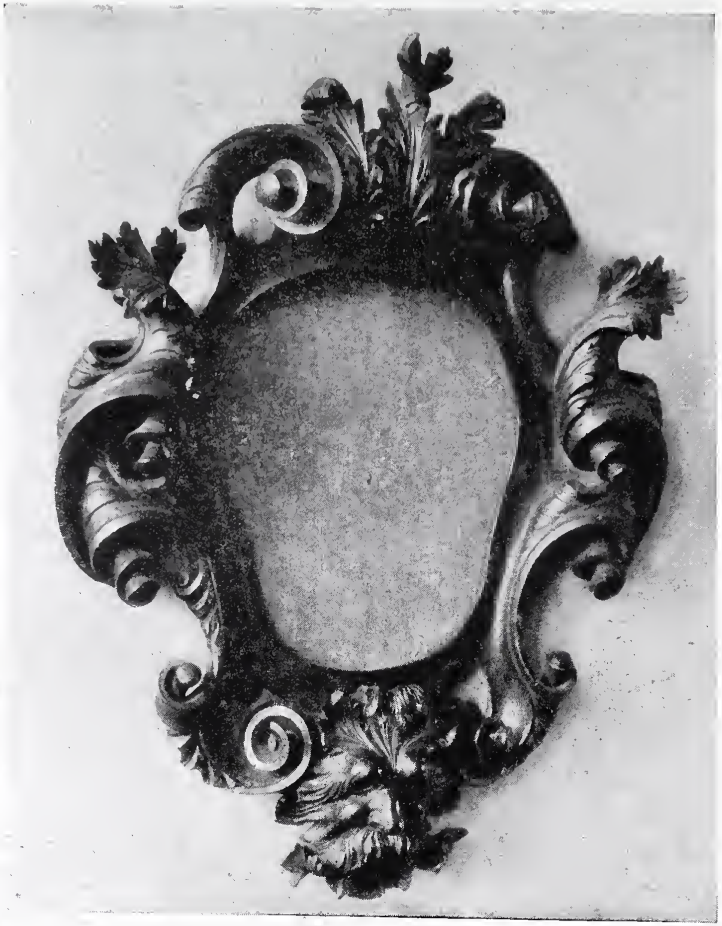
About the middle of the eighteenth century a latticed form of handrail balustrading was adopted, based upon the principles of the Chinese vogue introduced at the time of Chippendale and Chambers. There is such a staircase extant at No. 5 John street, Bedford Row.

The light balusters occurred again towards the end of the century and presented a more delicate form during the Adam period. A house adjoining the Church of St. Mary in Abchurch Lane, City of London, had balusters of this period, and two of the rooms were decorated with Chippendale scroll-forms and early Adam ornament to ceilings and walls respectively.

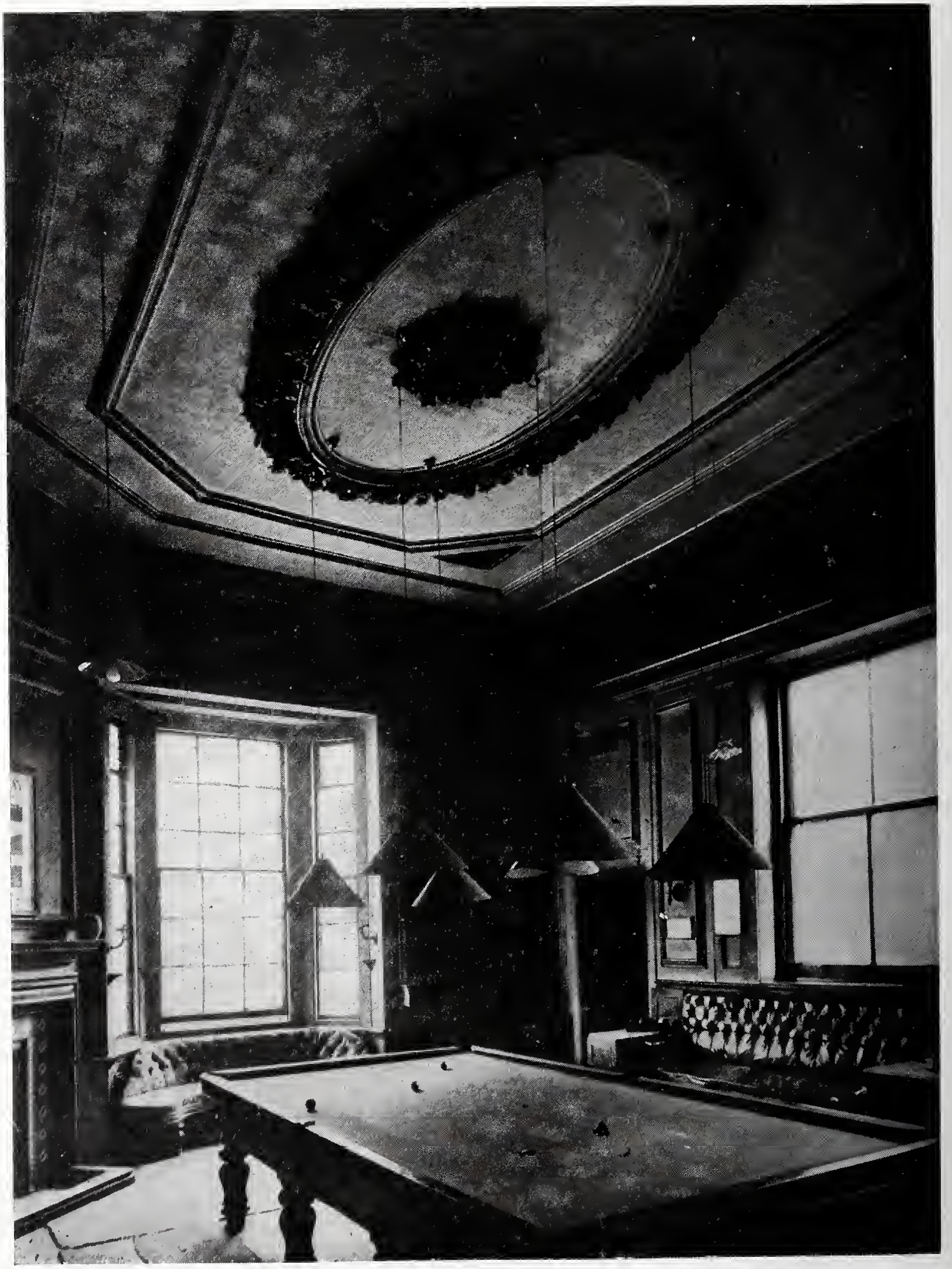
Mitering three ways to the top angles of doors obtained from the early seventeenth century, and was practiced at Wilton and later in chimneypieces. In the Gibbs period the projection was orna-



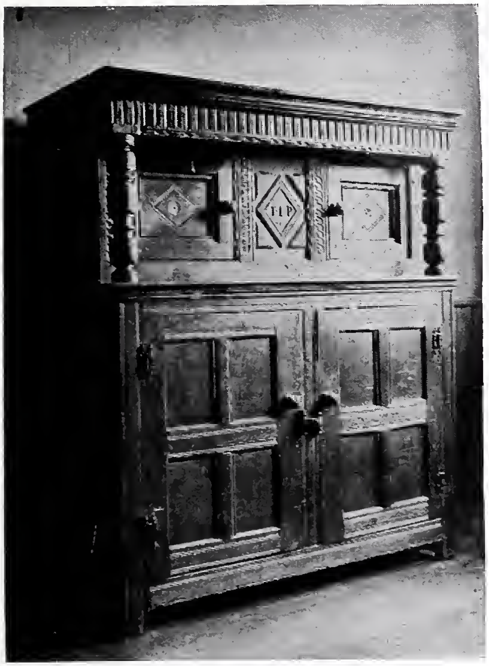
KING CHARLES' CABINET—ASTON HALL.



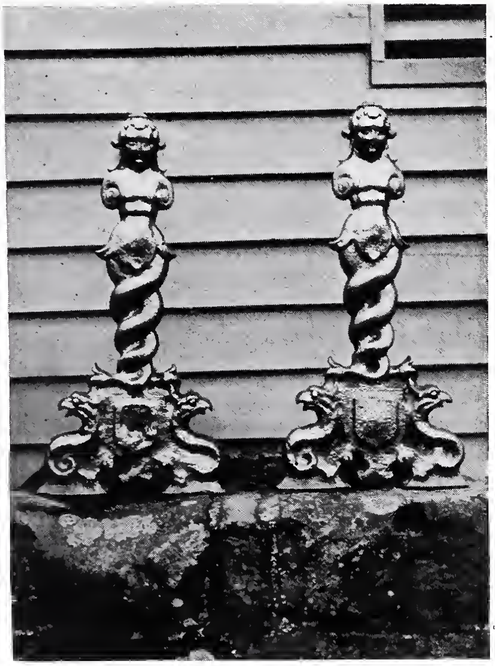
MAHOGANY CARTOUCHE MIRROR FRAME OF THE EIGHTEENTH CENTURY (IN VICTORIA AND ALBERT MUSEUM).



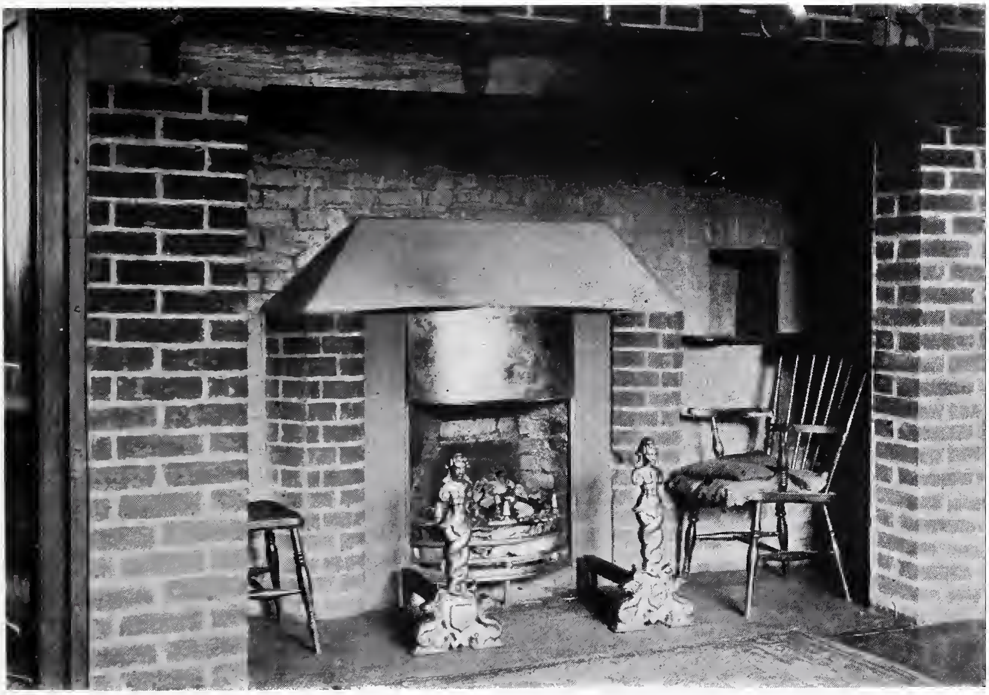
BILLIARD ROOM—OLD HALF MOON INN, EXETER, DEVON. PULLED DOWN, 1912, FOR LLOYDS BANK, LTD.



JACOBEAN COURT CUPBOARD.



CAST IRON FIRE DOGS.



FIREPLACE WITH CAST IRON FIRE DOGS.

mented by pendant husks, giving an interesting finish to the example.

Ornament cast in composition or modeled gave way to bold and daring carving in oak and limewood, which, owing to its delicacy in the stalks and similar parts, have in many instances been much damaged by time. Holme Lacy, Hereford and Penshurst Place possess famous carvings of the Wren period by Grinling Gibbons.

The wrought iron handrailing at Pembroke House, Whitehall Gardens, is of simple design, and about the period of William Kent or Chambers. Illustrations of the anteroom were given in a recent number of this journal, concerning the authorship of which there is some controversy. Chambers is reputed to have executed the board room adjoining, but it is possible the anteroom is somewhat earlier. William Kent was responsible for much work there, as also at the Treasury Offices in Whitehall.

To fully fathom the authorship of many of the examples of decoration in London public buildings is no light task, as very indifferent records are kept in most instances.

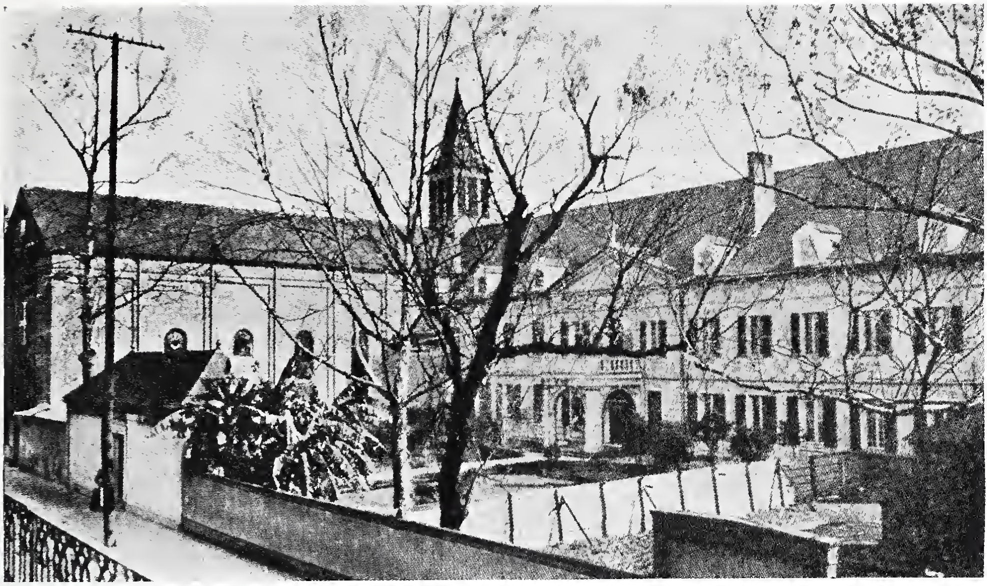
Inigo Jones's Banqueting Hall, for example, was refaced by Wren, Sir John Soane and Sir Charles Barry; the Treasury Buildings received the attentions of William Kent, Soane and Barry; the Admiralty is of two distinct periods, and many similar buildings suffered like vicissitudes.

Furniture is one of the most interesting studies connected with the history of interior decoration, but is so vast a subject that it can hardly be dealt with in short articles. It must suffice to refer to the chief differences which are to be noticed in the periods concerned.

The stuffed chairs of Charles I period gave way to caned seats and backs with carved strainers, etc.; in Charles II's time this practice obtained until Queen Anne's reign with slight variations, the backs in the latter period being higher. The Chippendale chairs were usually of walnut and had claw feet with open carved backs, and a lighter form was adopted in the birch painted chairs of the Adam period. Sheraton, Heppelwhite and other of the numerous joiners of the late eighteenth century varied these designs, working for the most part in mahogany.

Inlaying in mother-of-pearl and ivory was adopted in some isolated instances in chairs and tables, and veneering in spinets and organ cases and furniture obtained from the time of Sheraton onwards. Turned rails and legs to chairs became common in later times, which, however, could never attain the interest of the earlier examples. The variety of patterns in chairs alone are legion; while bureaus, consoles, mirrors and other furniture have their relative charm in the periods to which they belong.

I hope to illustrate some ceilings in my next article before passing on to the Adam and more modern decorative treatments.



THE ARCHBISHOPRIC, NEW ORLEANS, OLDEST BUILDING IN LOUISIANA.

The CREOLE·ARCHITECTURE OF·OLD·NEW·ORLEANS

By N. C. CURTIS

With Illustrations of Wrought and Cast Iron from the Collection of Photographs at Newcomb College

MANY discriminating persons have brought to New Orleans on their initial visit a somewhat skeptical and dubious anticipation of the unique charm that they had been told existed there. They have come prepared to be disappointed; but they have gone away carrying with them enthusiastic impressions of the city, its quaint old architecture, its cosmopolitan atmosphere, its graceful social customs, the superlative culinary achievements of its restaurants. They would then have us believe it to be one of the most distinctive and wholly delightful cities of America. And I am not one of those who would take issue with them or dispute their verdict in any particular. New Orleans is a charming city and, moreover, is one of the few really beautiful cities of the North American continent.

In support of this conclusion we have the opinion of Mr. Birge Harrison, among others no less competent, who referred to New Orleans, Quebec and Charleston as being three cities of America where the architecture of pre-Revolutionary days has come down to us undisturbed. He believes them to be the most beautiful cities in the country, and thinks this is largely due to their having been built to meet certain social and climatic conditions which could not be overcome or avoided.

"In accepting the limitations which were thus imposed and working within them," he says, "the old architects achieved a character, a beauty and a harmony which could have been secured in no other way." In New Orleans the architect's problem was to guard against the sun, and "the natural reply to this was found in wide flung eaves and broad verandas mounted story upon story to the very roof line." The need of railings on the upper levels led to the use of decorative ironwork. "As a result of this the piazza railings of New Orleans are unique. . . . The patterns are infinitely varied and the design almost always intricate and graceful. The strongest impression which the esthetic pilgrim carries away from New Orleans is that of a city whose houses are seen through bands of lace."

Without further introduction let us imagine ourselves within the "Vieux Carré." This interesting neighborhood, locally known as "Frenchtown," adjoins the lower side of Canal street and is only a few steps from the heart of the hotel and business section of the city. The ancient enclosure, as we know it today (see map), is bounded by Canal, Rampart and Esplanade avenues and the river, and many of its picturesque streets still bear the names of the lords and ladies of the court of Louis XIV. Unfortunately, in 1788 a great fire swept this district, completely devastating all except the waterfront of the original city. Consequently there are within the area few existing buildings of the early Spanish occupation or of the original French régime.

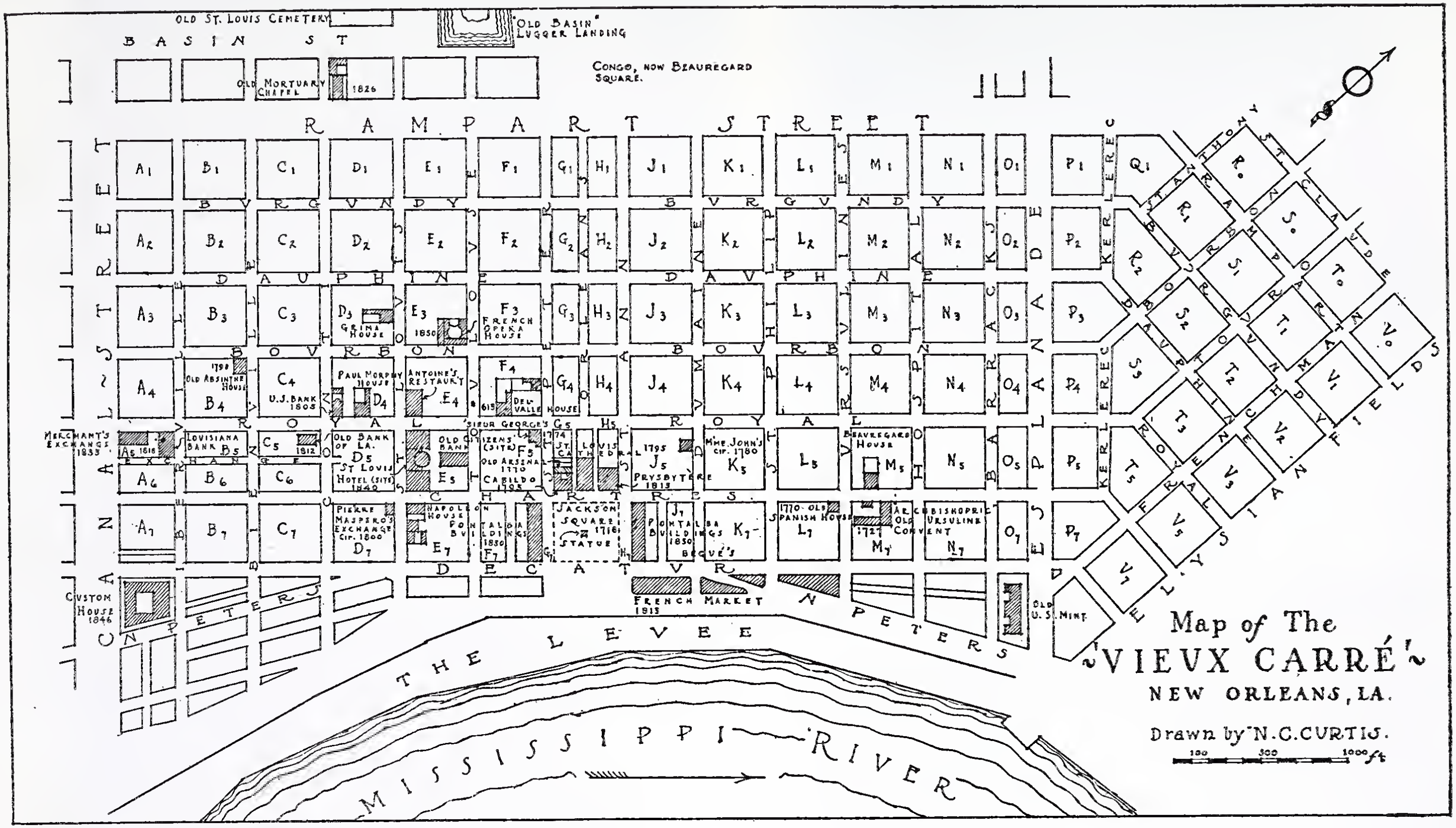
The earliest Convent of the Ursulines, now known as the Archbishop's Palace, on the corner of Chartres and Ursulines streets, is the sole building of importance now standing of the epoch from 1724-64. Erected in 1730, its steep roof, tall chimneys, rusticated quoins and air of quiet restraint strongly recall, externally at least, the contemporary French hotels of the early Louis XIV period. Its interior, on the other hand, by its frank disavowal of all decorative amenities, is suggestive of the simple, unpretentious life of the colonial pioneer.

In 1764 it became known that Louisiana had been ceded to Spain, and during the following interval up to the conflagration of 1788 many interesting dwellings were erected, few of which survive to our time.

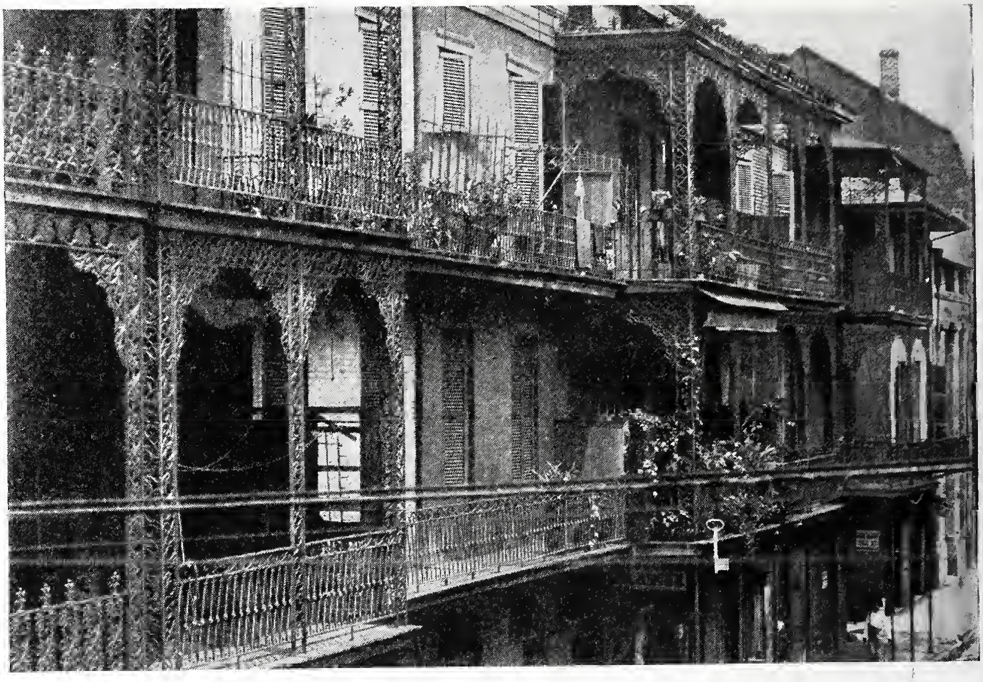
There is that quaint old building, on Chartres street opposite the Archbishopric, whose plastered walls and low-hung tiled roof are, no doubt, typical of most of the town houses of that time. Two years ago it became necessary to ratproof this ancient relic, and had it not been for the diligent efforts of the Committee on Preservation of Historic Architecture of the Louisiana Chapter of Architects, the owners would assuredly have preferred the option of tearing it down and the city would thereby have lost almost the last remaining specimen of the architecture of that period.

Far more interesting architecturally are the suburban plantation houses built along the Bayou St. John, and that very odd creation of the semi-plantation type on Dumaine street, known as "Madame John's." The former recall, with their wide surrounding verandas, the rural dwellings of the wealthy West Indian sugar planters, and, with the exception of certain local modifications, are of a distinctly tropical type. Several excellently preserved examples of these delightful old residences may still be seen well within the limits of the present city. Leaving the car at the end of Esplanade avenue, one has but a few blocks to saunter along the Bayou road in order to find himself carried back through only a slight stretch of the imagination to broad, sunny acres, sweet-smelling magnolias and spreading live oaks. Let him pause at the right spot, circumscribing his vision ever so little so as to shut out the encroaching array of sordid modern tenements, and he will glimpse through well-kept greenery of lawn and garden, ranges of round, white stuccoed columns, and above under the sheltering branches of the oaks a cool inviting gallery and a long stretch of overhanging eave supported by slender, molded wooden posts.

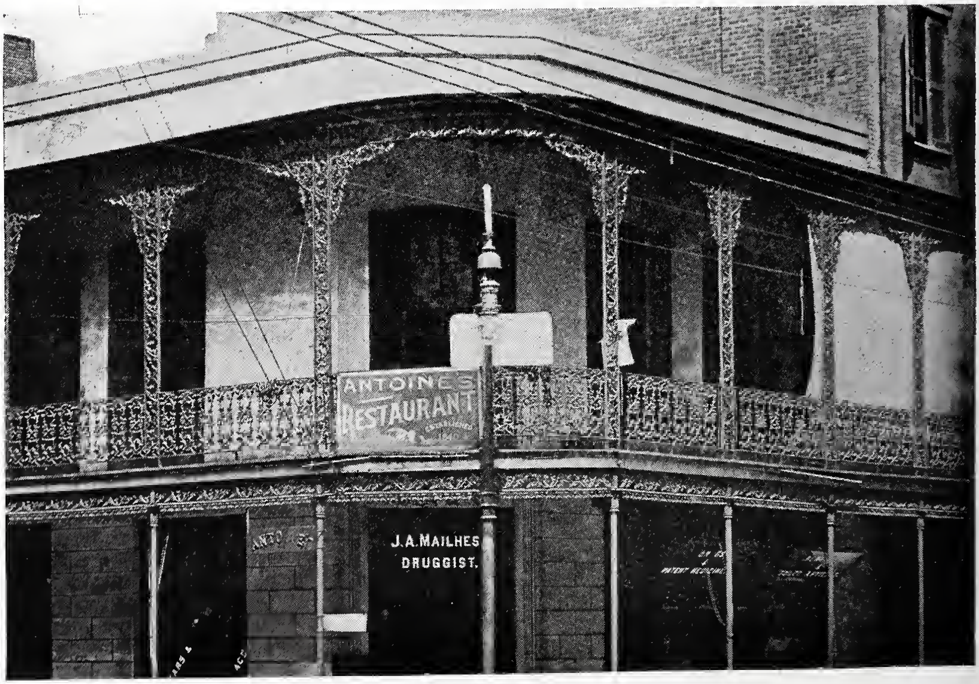
No more curious specimen of architecture exists anywhere than "Madame John's Legacy," that odd half-country, half-town house on Dumaine street, locally identified with Cable's delightful



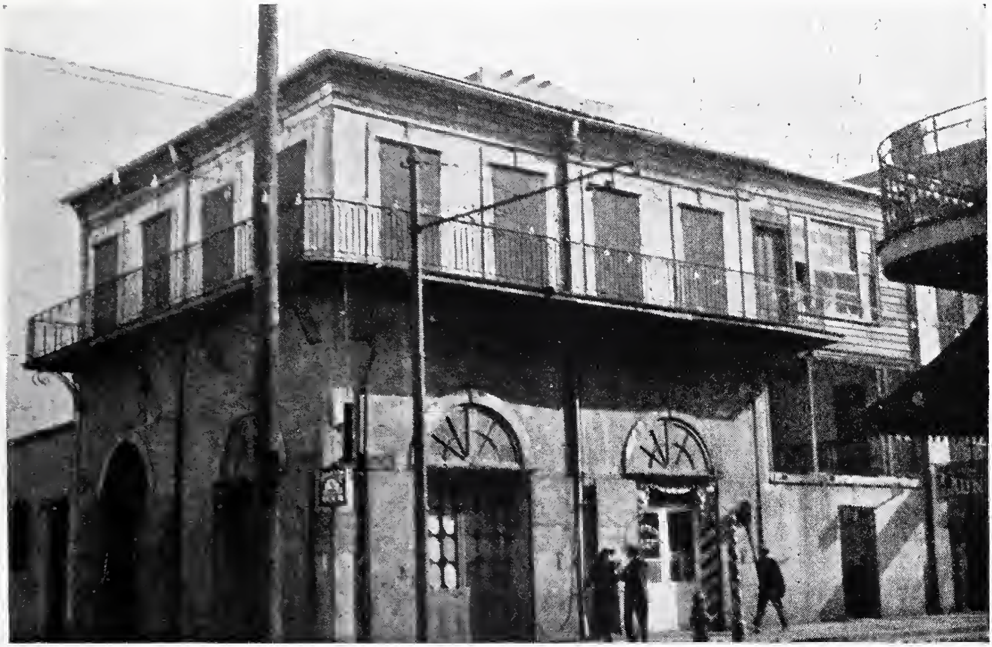
MAP OF THE OLDER SECTION OF NEW ORLEANS, LOCALLY KNOWN AS "FRENCHTOWN."



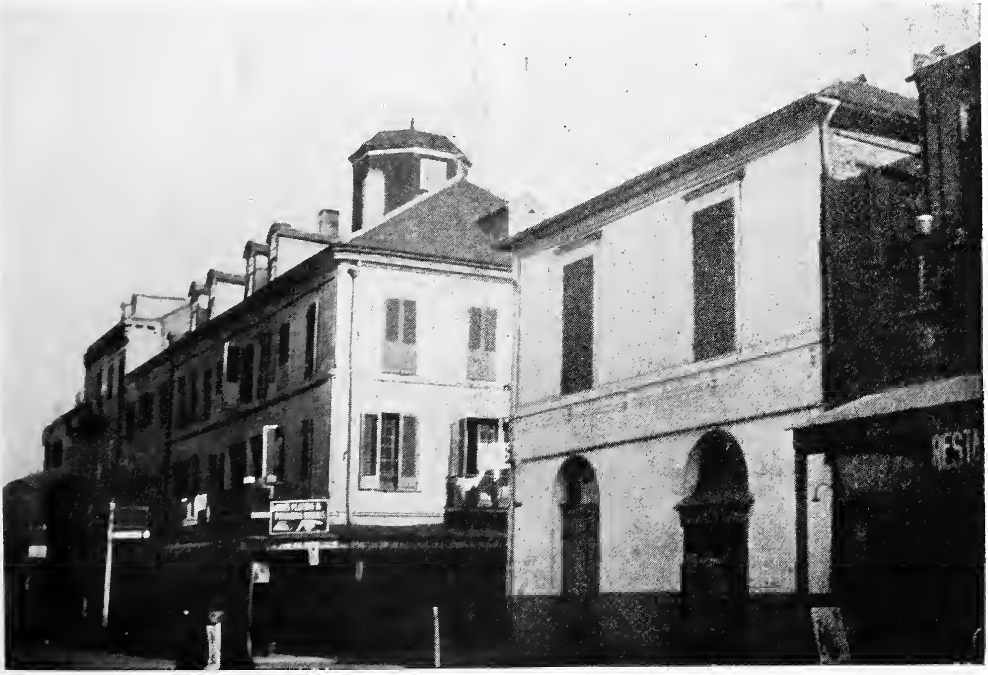
IN THE FRENCH QUARTER. BALCONIES THAT ARE VISTAS OF LACY IRON WORK.



ANTOINE'S CORNER, OPPOSITE OLD ST. LOUIS HOTEL.

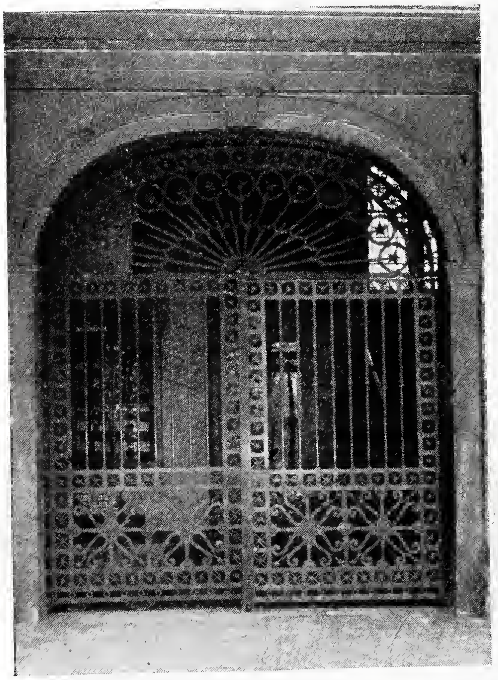


THE OLD ABSINTHE HOUSE, ON BOURBON STREET.



NAPOLEON HOUSE AND PIERRE MASPERO'S EXCHANGE, THE LATTER MUCH DEFACED.

story. It exhibits in an extreme degree what at first appears to be an irreconcilable contrast in the use of material, between the basement floor and the gallery above. It would seem that the original builder, starting out to erect a solid brick mansion, changed his mind at the first floor level and finished upward with light and fantastic wood construction. This practice is, however, one of the outstanding characteristics of the plantation type and may be supported by good reasons, artistic as well as practical. Madame John's has an odd double pitched roof, which is unique architecturally, so far as our observation goes.

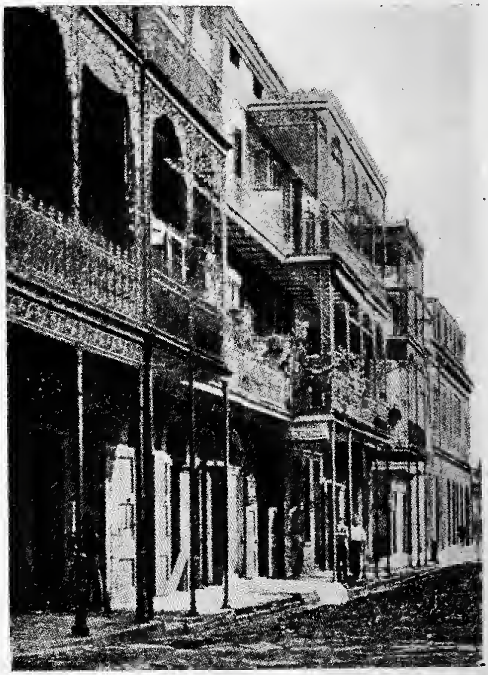


THE CABILDO, AND CAST AND WROUGHT IRON GATE OF THIRTEEN STARS.

We may mention here parenthetically that many of these interesting features of our local Colonial architecture in Louisiana have been copied and adapted by architects elsewhere in the country, who have visited this section from time to time. The fat Tuscan columns, which are an invariable accessory to the so-called Dutch Colonial style of country house, find their counterpart in the stuccoed brick pillars of our plantation type—to mention but one salient feature as an example.

In order to summarize the characteristics of the Colonial manner, it will be sufficient for the purposes of this article to invite attention to only a few well-known examples.

The Cabildo is doubtless the most widely known relic of the ancient style and of the Spanish domination. This really imposing edifice approaches the dignity and importance of an architectural monument, and may be said to bear the same relation to our own local art history as those great buildings of the old world, which Professor Hamlin has so happily called the "Milestones of Architecture," bear to their times and ages. Certainly in its own way it is not unworthy to rank beside the famous Basilica of Palladio, concerning which the author says with pardonable pride "I do not question but that this fabric may be compared to the ancient edifices, and be looked upon as one of the most noble and beautiful buildings erected since the time of the ancients, as well on account of its largeness and decoration



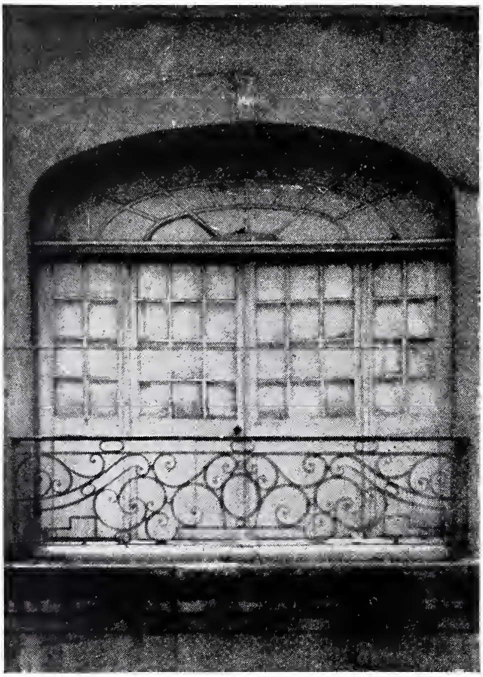
BALCONIES ON ST. PETER'S STREET.

as of its matter, which is all hewn stone, hard to the last degree, and joined and bound together with the utmost care."

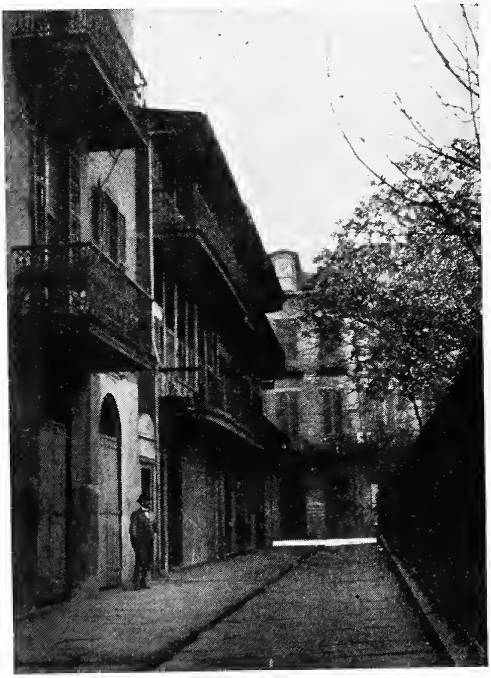
While the ancient Cabildo is not "all hewn stone" by any means, but mostly common brick and stucco, it still has that largeness of manner, which even master Palladio himself, in spite of his fine words, found could be got in his later work through the medium of the less worthy materials. Indeed there are many features of the Cabildo which, in the coming age of concrete and plastic material, will be found to be worthy of study and inspiration. Not the least of these are the solidity of its proportions, its appropriate stucco moldings, and the subtle evasion throughout of all false suggestion of stony construction.

While we are in the neighborhood of the Cabildo we must not omit to call attention to the "Old Spanish Arsenal," immediately adjoining it on the rear. Who the designer of this façade was we do not know, but we confess to no little admiration for his power and artistic skill in composition. He must have been actuated to a considerable degree by the sort of ideal laid down by Ruskin in his famous and oft-quoted paragraph in the "Seven Lamps of Architecture." "I do not believe," says that great critic, "that any building was ever truly great, unless it had mighty masses, vigorous and deep, of shadow mingled with its surface. And among the first habits that a young architect should learn is that of thinking in shadow, not looking at a design in its miserable, liny skeleton; but conceiving it, as it will be, when the dawn lights it and the dusk leaves it, when its stones will be hot and its crannies cool, when the lizards will bask in the one and the birds build in the other. Let him design with the sense of cold and heat upon him; let him cut out the shadows, as men dig wells in watered plains, and lead along the lights, as a founder does his hot metal; let him keep the full command of both, and see that he knows how they fall and where they fade. His paper lines and proportions are of no value; all that he can must be done by spaces of light and darkness; and his business is to see that the one is broad and bold

STREET IN FRENCH QUARTER.


ARCH AND WINDOW TREATMENT, THE CABILDO.

enough not to be swallowed up by twilight, and the other deep enough not to be dried up like a shallow pool by a noonday sun." In some such spirit, indeed, was the front of the "Old Arsenal" conceived; for it has not only breadth and depth of mass, but sincerity in its details, cleverly profiled moldings and ironwork of no less interest.



ST. ANTHONY ALLEY.

The prevailing custom of painting all woodwork, such as shutters, doors, trim, etc., green, gives to the old buildings of the lower city one of their most striking characteristics. Whether this is a custom or a preference I do not know, but in any case it is something to be commended, for any one with an artistic eye must feel at once how immeasurably the general color scheme is enhanced. This is not the bottle-green that is more familiar elsewhere, but a sort of arsenical viridian, due to the weathering of what the technical experts would call an inferior grade of paint. It is certainly very far from the latter's ideal of unchanging monotony, for the sun and rain have broken it up into many shades of green, blue and yellow, and if it ever had any shine that has long since departed. When one of those delectable tropical violet shadows happens to fall next to this equally charming green, as is more apt to be the case than not, the color combination is one to make even the most casual observer take notice.

The "Old Arsenal" has recently been transformed into a "Battle Abbey," a very interesting museum of military relics, and consequently became subject to certain alterations and improvements, among which may be noted the repainting of its doors and iron grilles a funereal and jetty black, in place of the above mentioned excellent green. But the "Old Arsenal" had to be repaired in order to fit it for its new purpose; a most commendable idea and one that I would not be thought to disparage.

For it is especially true of all buildings that they should be kept in repair. We cannot go on letting them rot indefinitely for the sake of art, especially art as it appeals to the painter. It is a sad fact that dust, dirt, slime, moldy tumbled-down walls, uneven, ill-kept streets and roads, and general decay and dissolution are all very essential and appropriate elements of a picture. The architect, although he does not lack the pictorial eye, has to be something more than an artist. The exacting practical limitations of his profession demand orderliness; hence, when an architect is commissioned to alter and repair some historic building and adapt it to present-day uses, he finds it one of the most thankless and unsatisfactory tasks that could come within the range of his practice. He cannot translate its decayed beauty into new and fresh materials; and even when he tries to preserve some of the antique character of the building, the result is almost certain to be inharmonious and offensive to his own artistic sense.

If it be granted that the "Vieux Carré" is worth preserving at all, its representative architecture should be treasured by its owners and by the whole city; and if alterations become necessary, they should not be lightly undertaken.

Alterations of one sort or another have been the curse of art from the earliest times, and it would seem that in this respect, of all forms of art, architecture has received the least consideration. It too often happens that the architectural unity of a fine old building is spoiled by the heavy hand of the ruthless restorer, and so its original character is lost. If it were possible to do for buildings as is indicated would be advisable to do for other forms of art, in an old book called "The Everyday Philosopher," where alterations are contemplated, the case would not be so hopeless, to wit: "If you pretend to show us Raphael's picture, let it be exactly as Raphael left it. Call it what it is: Raphael altered and improved by Snooks. If you take a sovereign, and drill several holes in it, and fill them up with lead, you will be made to feel, should you endeavor to convey that coin into circulation, that though you may sell it for what it is worth as a sovereign plugged with lead, you had better not try to pass it off upon people as a genuine sovereign."

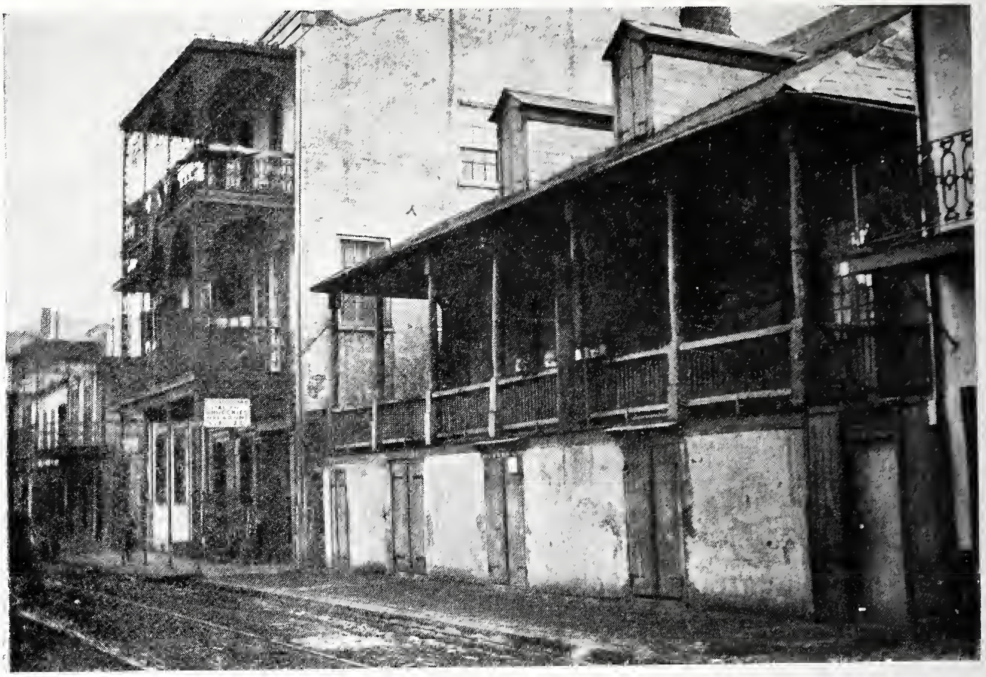
But my affection for my venerable friends of the "Vieux Carré" is perhaps leading me too far away from my subject, and I will therefore pass on to a brief consideration of what may be called the "Intermediate Epoch" of New Orleans architecture, culminating in the "Ante-bellum Style."

Before doing so let me urge the pilgrim to pause in front of the "Old Absinthe House," and after noting its admirable proportions and the charming effects of color in the pigment-soaked plaster of its rotting walls, to step within. Nothing could be more whimsical than the workings of the fancy of the planner of this building, and yet it is most admirably suited to its purpose. At least so, it would appear, have agreed the multitude of notable visitors who have signed its ponderous, century-old register. Turn to the right when you enter and you will find yourself in the curious court. In this small enclosure are discovered the elements of architecture assembled together in a most picturesque fashion—some arches; vaults; a ponderous Tuscan column; a heavy, blackened timber ceiling; a delicate, winding wooden stair leading to a Juliet's balcony and entresol; four stuccoed walls, and a paved floor.

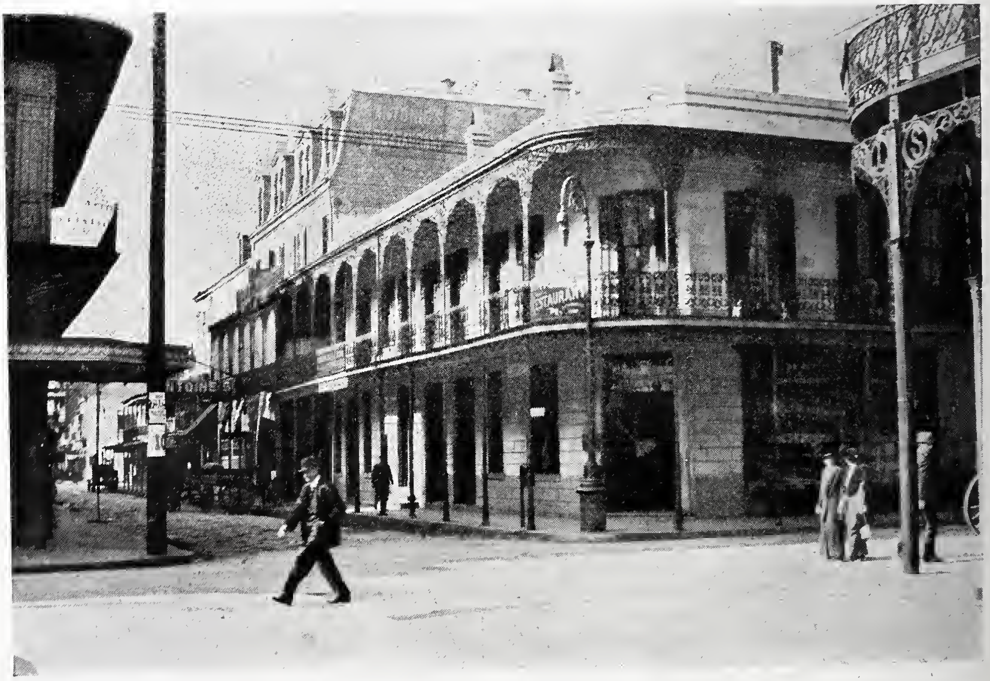
Other buildings worthy of note are the house said to have been built for the reception of the exiled emperor, Napoleon, and the houses immediately adjoining it on St. Louis street; Pierre Maspero's Exchange, at the corner of St. Louis and Chartres streets, a well proportioned building with an elegant cornice; and the house known as "Sieur George's" on Royal street near the Cathedral yard, and many others.

ON PRYTANIA STREET, IN THE "GARDEN DISTRICT."

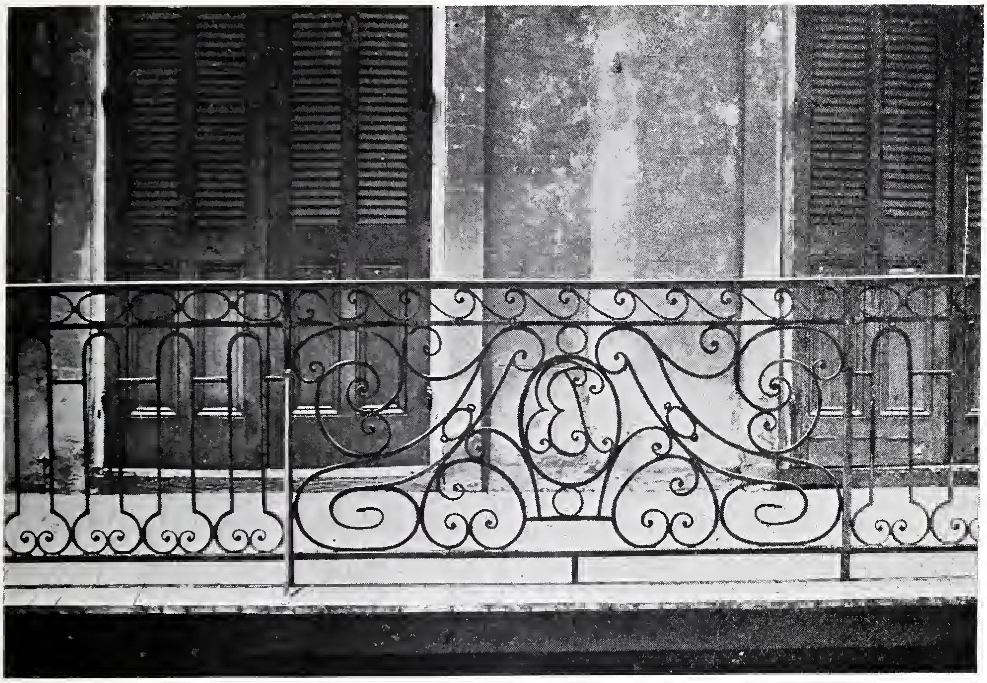
Among the interesting creations of the early part of the Intermediate Period are the courtyard houses of the "Quartier." Here we have, in a sense, real architecture, inasmuch as the style is founded upon the fundamental principles of its surrounding civilization. Social customs, climate, local materials and cultured taste, have each here contributed toward making these delightful dwellings almost personal witnesses of their contemporary environment. In plan, their arrangement was much the same as the Greeks and Latins, from the earliest



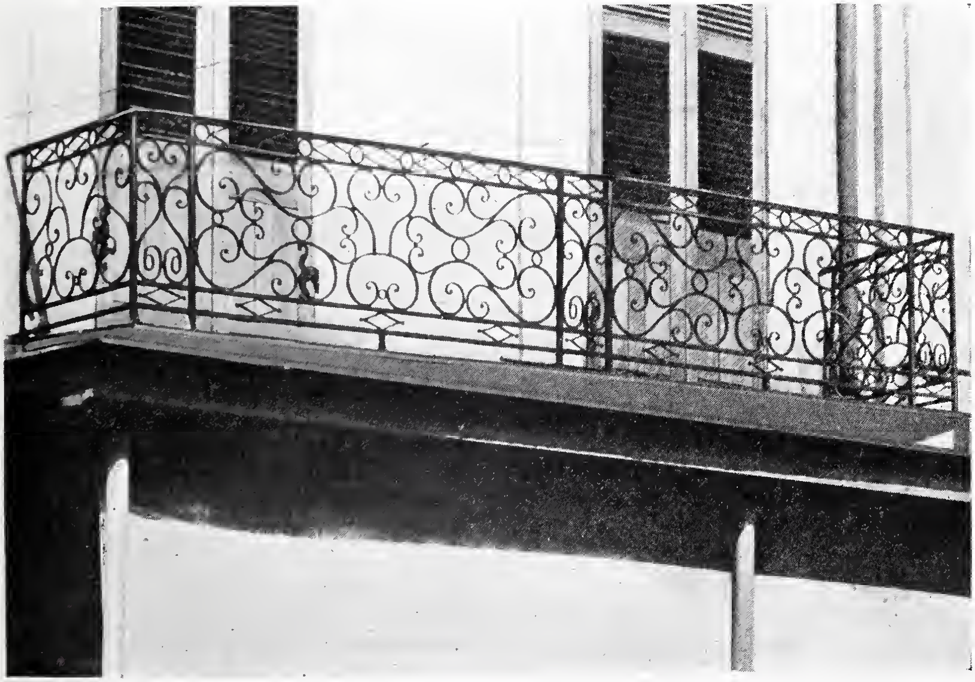
THE HOUSE KNOWN AS MADAME JOHN'S.



CAST IRON BALCONY OF ANTOINE'S FAMOUS RESTAURANT.



A CHARTRES STREET BALCONY WITH FAMILY MONOGRAM.



A WROUGHT IRON BALCONY ON ROYAL STREET.

times to the present day, have found best suited to a semi-tropic climate; and in the latitude of New Orleans, it is certain that latter-day architects have been able to devise nothing more comfortable for all seasons.

As is well known, the old houses of the French Quarter nearly all had courtyards, and these were entered from the street through a lofty arched portal and enclosed passageway leading directly to the courtyard itself. The latter was paved with bricks or stone flags, and usually was provided with a water-jet and pool and planted with flowers and shrubs. High walls on four sides made it certain that there would be shade during the greater part of a summer's day; while the rapid evaporation of moisture from the dampened flags, aided by a draft of air through the entrance corridor, reduced the temperature many degrees below that of the outside street. Such an arrangement no doubt was as near perfect an expression of local conditions when the city was small and compactly built as could have been devised, but it would be hard to adapt it to the extended area and loosely built blocks of the city's modern residence sections.

Modestly recalling, in general disposition of rooms, the Renaissance palaces of Northern Italy, there are found in these old houses, on the first floor, corresponding to the "Piano Nobile" of the Florentines, usually a few apartments of fine proportions, including a salon, dining room and stair hall; while the ground floor was given up to stables, servants' quarters, and, in many cases, the counting-room or shop of the owner who dwelt above. Many houses of this interesting type are to be found along Royal street, most of them now seized upon by dealers in antiques and petty tradesmen, but a few still occupied by the original families who have remained in their old homes. On the street façade there will be found an overhanging balcony of elegant design and craftsmanship in wrought iron, supported by graceful brackets. Massive entrance doors, furnished with hand-forged knockers and fasts, serve to close the arched alleyway, leading from "banquette" to inner court, while a smaller door in one of the leaves of the large portal gave passage on ordinary occasions.

Houses of this type were built during the first quarter of the last century; but gradually as the city extended its bounds, they gave place to the more pretentious detached dwellings of the immediate ante-bellum period—that is to say, from about 1840 on. Fine examples of these mansions may be seen along Prytania and adjacent streets in the so-called "Garden District." During the same interval, balconies of wrought iron gave place to those wonderful galleries of cast iron, perhaps the most universally admired feature of New Orleans architecture; a feature which is not less admired in our own day and which will continue to be admired so long as the sense of artistic discrimination exists. As a unique artistic achievement in a very difficult material, its value is well known and has been properly assessed by such competent critics and writers as Woodward, Owen, Labouisse, Goldstein, Whitaker, Bailey and others.

The galleries are also a hobby of my own, and I would enjoy calling further attention to their merits; but they form a separate chapter in themselves. Moreover, these beautiful examples of the Creole taste in architecture must be seen and, if possible, lived with to be fully appreciated.

Up to the period of Reconstruction in Louisiana the vernacular manner in design produced buildings which invariably rise above the commonplace; but since that time there has hardly been a single conscious effort to revive the local style, although it is admitted by architects that in much of the old architecture of the city there is a solidity, elegance and distinction that is hardly surpassed by even the highest class modern work.

Should one of the discriminating strangers mentioned in my opening sentence be set down in the middle of Jackson Square, he would be very sure that he was in New Orleans; but drop him in the newest business or residence section of the city, and it would be a shrewd guess indeed if he could tell from the architecture around him where he was.

·INDVSTRIAL· HOVSING·DEVELOPMENTS ·IN·AMERICA·

By LAWRENCE VEILLER

Secretary of the National Housing Association

PART III · A DEVELOPMENT *of* GROUP HOUSES

SAWYER PARK · WILLIAMSPORT · PA.

Geo. S. Welsh & Lewis E. Welsh, Architects

THE architects of America are just beginning to discover the advantages of the group house. It has taken them a long time to come to it. Fashions in housing seem to be as strong as in any other phase of human activity; and not only have the architects of America, but the public also until recently, clung with great tenacity to the detached house.

So strong throughout the country has been the feeling that the detached house is the only type of house for an American, that with considerable difficulty has a hearing been had for the claims of the group house, notwithstanding its successful use in Great Britain and on the Continent for many generations.

In the first article in this series we described a development made up entirely of single-family detached houses, that of Eclipse Park, at Beloit, Wis. The present article deals with a similar development made up entirely of group houses designed for the same class of workingman, the high grade mechanic.

One reason that the group house has not been popular heretofore has been because of the fact that it has been associated in the public mind with the "terrace," as it is called in the Middle West, or long row of stereotyped houses, deadly monotonous in appearance, with little architectural style, and consequently producing a dreary, unpleasing impression.

Whenever one has spoken of group houses the average person has instinctively thought of long rows of the hideous small dwellings of Philadelphia, or of the equally hideous rows of tall New York tenements, or of New York's earlier brownstone fronts. These represent the defects of the group house, not its merits. They are not at all inherent in the type itself. It is just as possible to secure variety in group houses as it is in individual houses; and detached houses can be quite as monotonous as even the Philadelphia row or the New York brownstone front if they are all alike and do not possess beauty of design or line; witness the appearance of any of the earlier so-called "mill villages."

The public is just beginning to have its eyes opened to the fact that it is not a choice between a row of drearily monotonous group houses or of well designed, attractive detached houses. In both cases the question is whether the houses are well designed and pleasing in appearance or whether they are not. The row house of England as developed by the ordinary commercial builder is quite as monotonous and unpleasing in appearance as anything we know of in this country; but the group house of the English Garden Village, on the contrary, is, as a rule, charming and attractive. It all boils down to a question of intelligent design and good taste.

The advantages of the group house for an industrial housing development inhere in the facts that is is easy to heat; that it costs less to build, and that because of its better proportions it is possible to utilize better design.

Sawyer Park, one of the latest and best industrial housing developments in this country, located at Williamsport, Pa., is unique in that it is a development entirely of group houses.

In the opinion of the writer it is architecturally the best thing in industrial housing that has thus far been done in this country. The houses are attractive in design, picturesque, quaint and with great charm. They are, moreover, well adapted to the needs of the community. They are essentially workingmen's houses and have been built at a cost that makes their purchase well within the means of the skilled worker for whom they have been designed.

This latest American Garden Village possesses great interest, not only for the housing reformer, but for the architectural profession, for the business men of the country and for those manufacturers who are seeking to reduce labor turnover and who are finding in improved housing a most potent means of overcoming this serious economic waste.

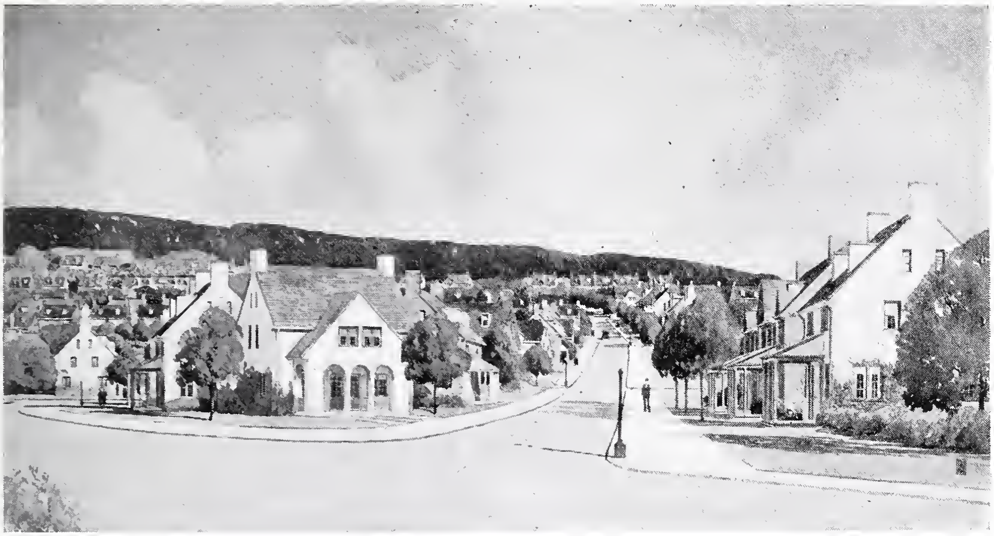
The development possesses unusual features of interest. It is not directly an employers' enterprise; nor is it, on the other hand, a land speculation scheme. The element of profiteering is entirely absent, as is also the element of paternalism and philanthropy. It is in every respect a citizens' movement.

In the spring of 1917, there being not a single vacant house in Williamsport at that time, the business men of the city, acting through the Board of Trade, made an appeal to the public-spirited citizens of the community, calling their attention to the need which confronted the city and the opportunity that lay before them. As a result, the Williamsport Improvement Company was organized with an authorized capital of $1,000,000, one-half of which was soon subscribed for the purchase of land and the laying out of a model residential community. Some 887 different individuals in Williamsport subscribed to the stock of the new corporation, which definitely limited its dividends to 6%.

One of the things which makes Sawyer Park especially interesting is that it illustrates the possibilities of developments of this kind in the smaller cities of America and also with comparatively small parcels of land. Williamsport is not a great metropolis. It has an estimated population of about 37,000. Nor in this case was there unlimited acreage for the development. City planners, as a rule, advise securing all the land that can be obtained and have laid down the principle that for a development of this kind there ought to be preferably 100 acres available and certainly not less than 50. In this case some 36 acres of old farming land has been utilized. The selection of the land was most fortunate; for the little colony nestles in the slope of a hill which shields the houses in winter from the northwest winds and gives to them the most desirable winds during the hot summer months. In addition, the settlement has very unusual attractions in outlook. It overlooks the river, across which there is the delightful view of Bald Eagle Mountain.

With great intelligence, the developers of the property have followed the natural contours and have utilized the sloping hillside to develop the houses practically to the crest of the hill in attractive terraces, rows of houses rising above others, clinging to the hillside in a way that suggests in their general appearance those attractive crescent terraces of Bath, England. A considerable part of the charm of the Park lies in this attractive grouping of the buildings and the way in which they fit into the natural landscape. This effect is greatly enhanced by the use of gently curving streets wherever possible, preserving at the same time the advantages of the rectangular street plan and fitting it into the street plan of the city itself.

One of the most distinctive features



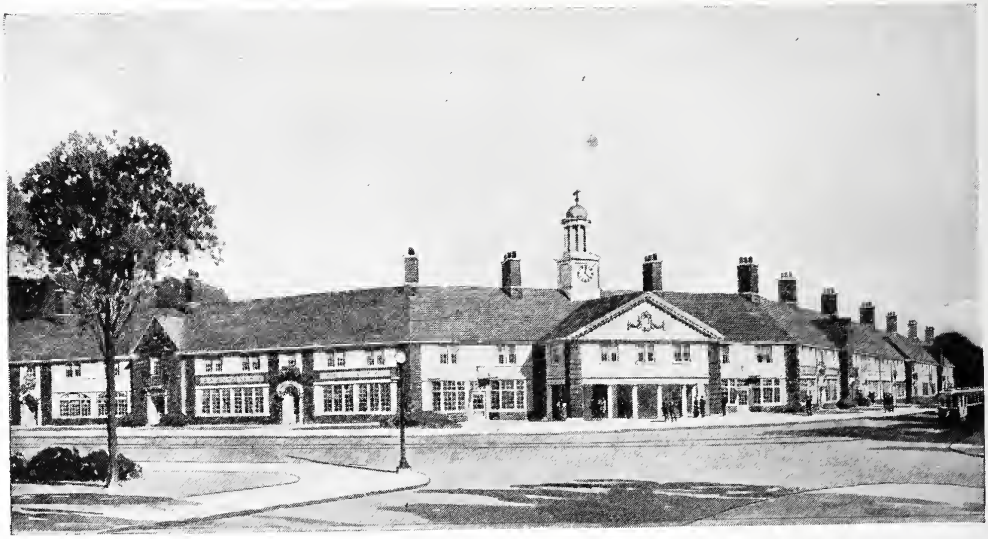
A CHARACTERISTIC VIEW OF SAWYER PARK.

of the whole colony and to which a large part of the charm is due rests in the fact that the houses have not been arranged in strict rectangular lines, but have been placed at angles, breaking up the monotony of the usual block plan that prevails in most cities. We understand that this method of grouping the houses was viewed in the beginning with grave misgivings by many of the local people. As one of the townspeople put it, "The man who laid out those lots must have been drunk or crazy."

The best city planning principles have been followed. This being a residential development the streets have not been made unnecessarily wide, the 40-foot street prevailing. One thoroughfare which borders the Park on the east, namely, Wildwood Boulevard, is 80 feet in width, and a curving highway known as Park Avenue, which skirts the main residential development on the south, was already established as a 60-foot thoroughfare. With these two exceptions all of the streets in the Park proper are 40-foot streets, thus not only saving money, which is so often wasted in streets of unnecessary width, but also discouraging through traffic from utilizing streets designed purely for residential purposes.

The orientation has been given very thoughtful consideration. While it has not been possible always to insure every room in every house getting direct sunshine at some hour of the day, owing to the necessity of adapting the development to the contours of the land, the maximum amount of sunshine has been afforded. According to the architect, ninety-seven per cent. (by actual count) of the rooms in the various buildings will have the sun at some hour of the day. Many of the houses face the south. Not only has the orientation been considered, but attractiveness of outlook has had equal consideration, and from practically every house a delightful and charming view over the treetops and across the valley to the surrounding hills is afforded.

The property, while on the edge of the city, is within the city limits and readily accessible by trolley. One line comes direct to the edge of the Park and another within two minutes' walk of it. The heart of the city is not over fifteen minutes away by trolley. Within a radius of a mile there are fourteen large industrial plants employing over 5,000 persons. It is thus possible for practically every one residing in Sawyer Park to walk to his work, even to get home at the noon hour for dinner, if that is desired—all of which means a consider-

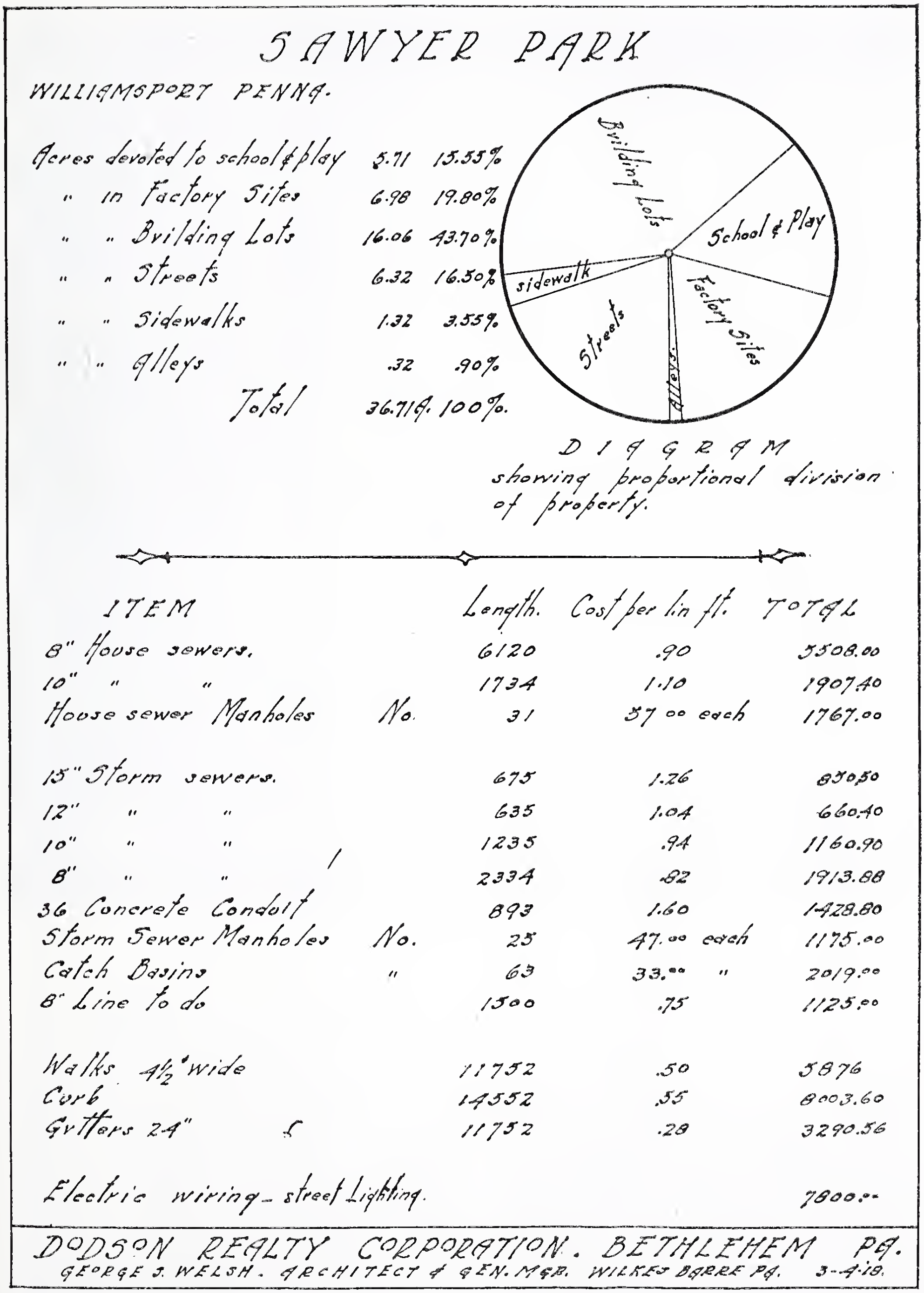


A FRINGE OF SHOPS AND APARTMENTS MASKING THE FACTORIES .

able saving in carfare, a saving that has been estimated to be equal to the equivalent of one month's rent. Public schools are within easy access. The high school is less than a mile away. Churches, stores and other public facilities are found in the neighborhood; but notwithstanding this, the company contemplates the building of neighborhood shops for the residents of the Park, in which can be found those small stores that are necessary for the needs of a community; in addition, a moving picture theatre and club or assembly rooms in which the social life of the community can be maintained are to be provided. A very attractive building for this purpose, harmonizing in architectural style with the whole park development, has been designed by the architects. While not yet erected, its construction is planned at a later date. Out of the total acreage of 36 acres, 5¾ acres have been set aside for recreation and play and school buildings.

The diagram on the opposite page shows in an interesting way the proportion of the land allotted to various purposes. Of the 36.71 acres 16.06 acres or 43.70% is utilized for building lots; 5.71 acres or 15.55% has been reserved for school buildings and recreation space; 6.98 acres or 19.80% it is contemplated to develop with factories; 6.32 acres or 16.50% is being utilized for streets; 1.32 acres or 3.55% for sidewalks, and .32 of an acre or a little less than one per cent. may be devoted to alleys. Following the practice of the best Garden Village developments, the property is being arranged so that when the whole development is completed there will be an average of about eight families to the acre.

To the south of the Park the company owns a strip of land running down to the railroad tracks that is adapted to factory development. In fact there are a number of factories already built in this location and it would be most unwise to develop this portion of the property in any other way. The company is now considering the suggestion, made by the writer when he was at Williamsport recently, of treating this property by developing with factories the major part of it immediately adjoining the railroad tracks, but placing on the Park Avenue end of the property, facing the main residential part of the Park, a fringe of shops and small apartments such as are shown on this page. This will serve a two-fold purpose. It will mask the factories and thus prevent the factory development from interfering with residential values; it will maintain the residential character and appearance of the entire Park; it will place the shops and stores and build-


Building Lots
School & Play
Factory Sites
Alleys
Streets
sidewalk

SAWYER PARK

WILLIAMSPORT PENNA.

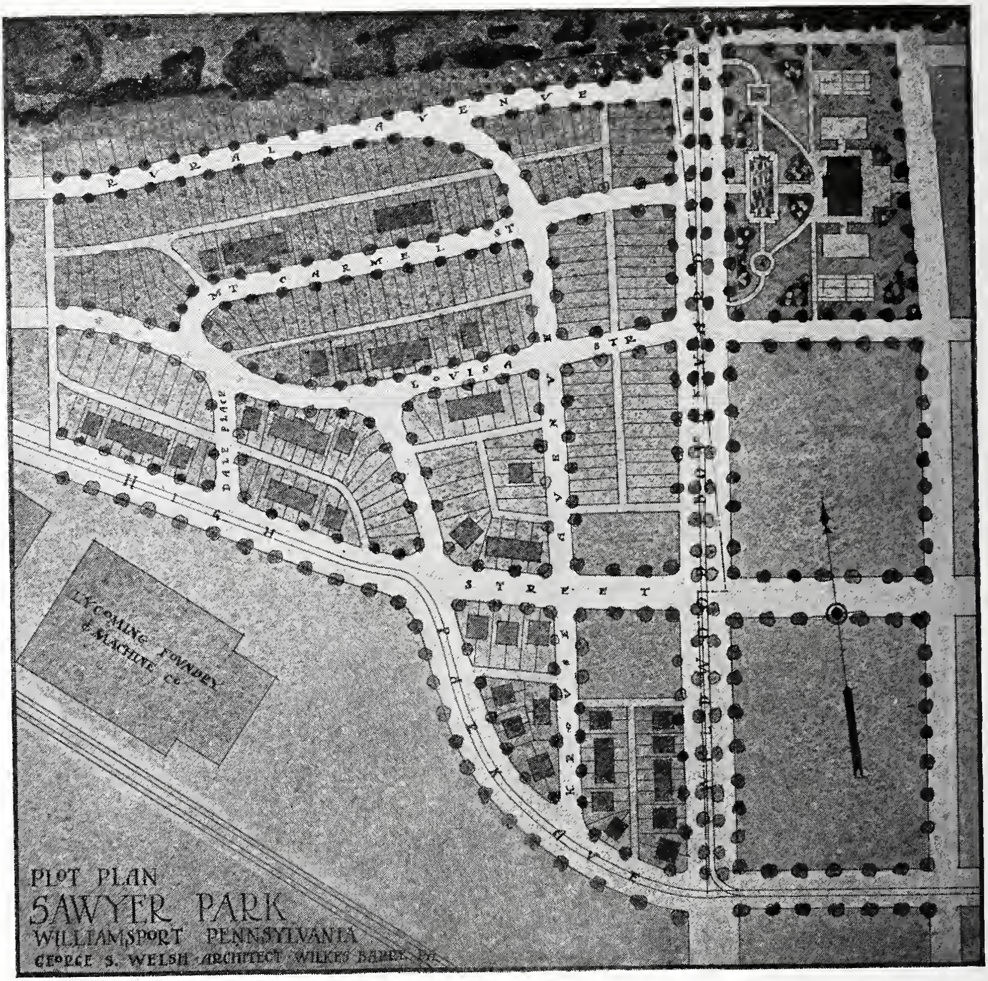
Acres devoted to school & play	5.71	15.55%
" in Factory Sites	6.98	19.80%
" " Building Lots	16.06	43.70%
" " Streets	6.32	16.50%
" " Sidewalks	1.32	3.55%
" " Alleys	.32	.90%
Total	36.71A.	100%.

DIAGRAM
showing proportional division of property.

ITEM		Length.	Cost per lin ft.	TOTAL
8" House sewers.		6120	.90	5508.00
10" " "		1734	1.10	1907.40
House sewer Manholes	No.	31	57.00 each	1767.00
15" Storm sewers.		675	1.26	850.50
12" " "		635	1.04	660.40
10" " "		1235	.94	1160.90
8" " "		2334	.82	1913.88
36 Concrete Conduit		893	1.60	1428.80
Storm Sewer Manholes	No.	25	47.00 each	1175.00
Catch Basins	"	63	33.00 "	2019.00
8" Line to do		1500	.75	1125.00
Walks 4½' wide		11752	.50	5876
Curb		14552	.55	8003.60
Gutters 24"		11752	.28	3290.56
Electric wiring – street Lighting.				7800.00

DODSON REALTY CORPORATION. BETHLEHEM PA.
GEORGE J. WELSH. ARCHITECT & GEN. MGR. WILKES BARRE PA. 3-4-18.

TABLE I.—LAND DISTRIBUTION AND USE. DEVELOPMENT COSTS.


RURAL AVENUE
MT CARMEL ST
LOUISA STR.
DALE PLACE
HIGH STREET
STREET
LYCOMING FOUNDRY & MACHINE CO
PLOT PLAN
SAWYER PARK
WILLIAMSPORT PENNSYLVANIA
GEORGE S. WELSH ARCHITECT WILKES BARRE PA

THE CURVING STREETS GIVE CHARM TO THE DEVELOPMENT.

ings of public assemblage in a sense on the outside of the Park and yet at the same time in a convenient location.

PLOT ARRANGEMENT.

With 36 acres available, as already stated, only 16 acres have been developed into building lots, the balance of the property being devoted to streets, sidewalks, recreation, etc. These 16 acres have been divided into some 25 different plots or blocks of varying size and shape, none of them too long, however, nor any of them too wide. On this land it is contemplated erecting altogether houses for 300 families; 100 houses have already been built.

TYPES OF HOUSES.

The houses are of three main types: Two-family houses—semi-detached or double—of which there are two types, Types A and B; four-family houses of Type D, and six-family houses of Type C. The best planned house in the writer's judgment is Type D, the four-family house. This is but two rooms deep and is a house of seven rooms and bath. Each house, there being four houses in a row connected by party walls (see pages 460-461), has a frontage of 22 ft. 3 ins., and a depth of 24 ft. On the ground floor there is a spacious parlor or living room 11 by 15 ft.; opening from

WILDWOOD AVENUE—A BORDERING THOROUGHFARE.
Trolleys Screened by Trees.

this with a large archway and to the rear of it is the dining room, 11 by 12 ft., and to one side of the dining room and at the rear of the entrance hall is the kitchen, 9 ft. by 12 ft. 6 ins. The entrance hall is very attractive, being 7 feet in width, and the stairs open from this and not directly from the living room, thus insuring privacy for the latter. Upstairs on the second floor there are three very attractive bedrooms and a good sized bathroom. The bedrooms are aproximately 10 by 11 ft. in size. On the attic floor there is a large bedroom, well ventilated, with windows at both ends.

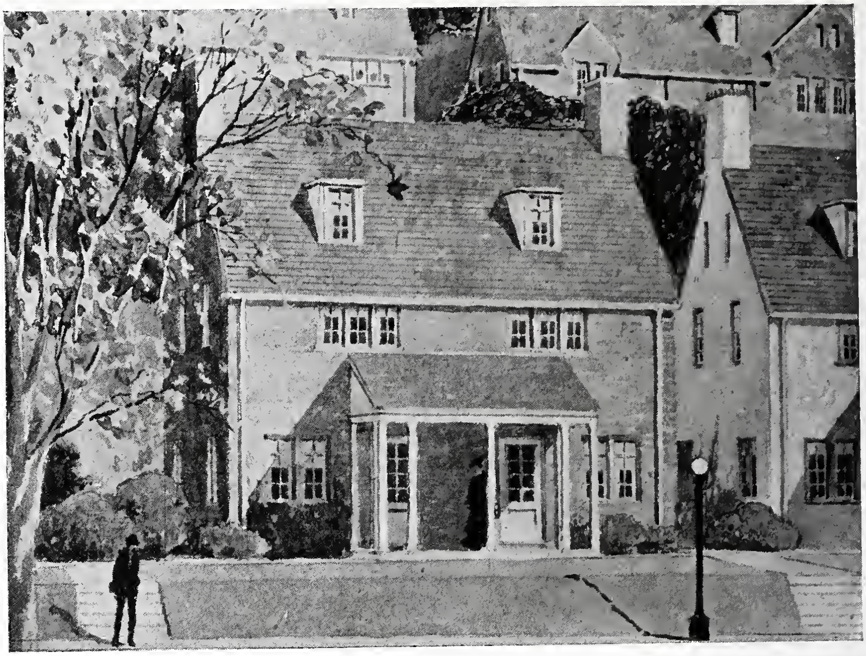
The rooms in this house are especially well arranged to insure cross ventilation, which is so important in view of recent discoveries as to the value of moving air. Both the parlor and the dining room have windows on two different sides, and are so arranged with reference to each other as to insure a complete circulation of air at all times. The bedrooms of the end houses similarly have windows on two sides, and in the middle houses the rooms are so located as to make cross ventilation possible.

THE TWO-FAMILY HOUSE—TYPE A.

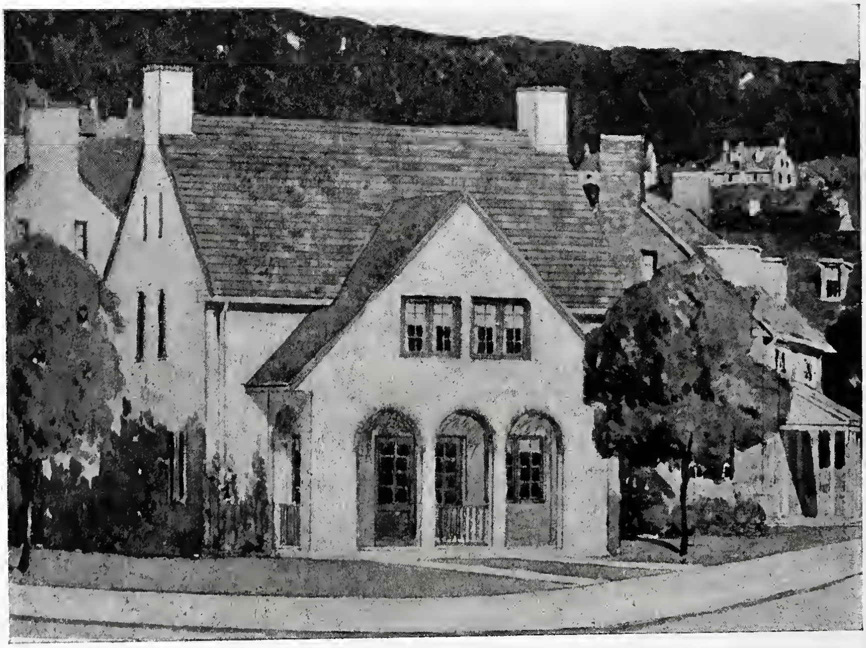
The double or semi-detached house is built on a 16-foot frontage with a 24-foot depth for the main body of the house and a kitchen extension making the total depth 33 ft. 6 ins. This house contains six rooms and bath—a parlor, dining room and kitchen on the ground floor, two bedrooms and bath on the second floor and a third bedroom in the attic. The size of the rooms and the general arrangement are very similar to the Type D house; all rooms being of generous size, the parlors in this case being 11 ft. 3 ins. by 12 ft. 6 ins., the dining room the same size and the kitchen 8 ft. 6 ins. by 10 ft.

TYPE B.

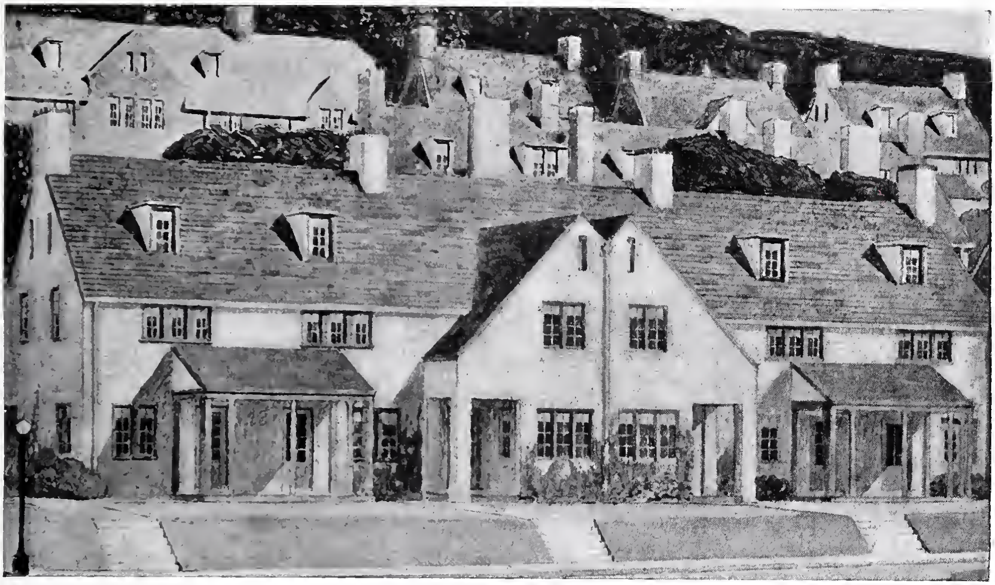
The other two-family or double house, Type B, is the least desirable type in the development. It is a three-room deep house, whereas all of the other houses are but two rooms in depth; the result is that the middle rooms—on the ground floor the dining room and on the second floor one of the bedrooms—are dependent for their light and ventilation on the somewhat narrow side yards left between adjacent buildings. Otherwise the type of house is similar to the other types already described, though all of the rooms in this type are somewhat smaller than in the others owing to the narrow frontage on which the house is built, each unit in this type having a frontage of 14 feet and a depth of 39 feet.



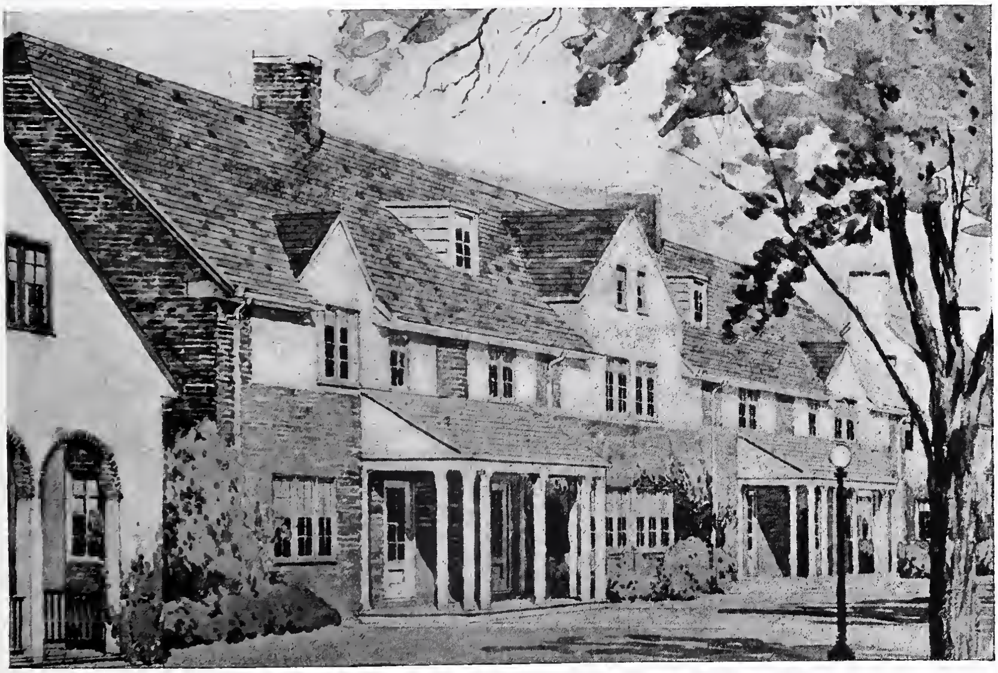
TYPE A—DOUBLE HOUSE.
Six Rooms and Bath; Unit, 16 Feet by 24 Feet.



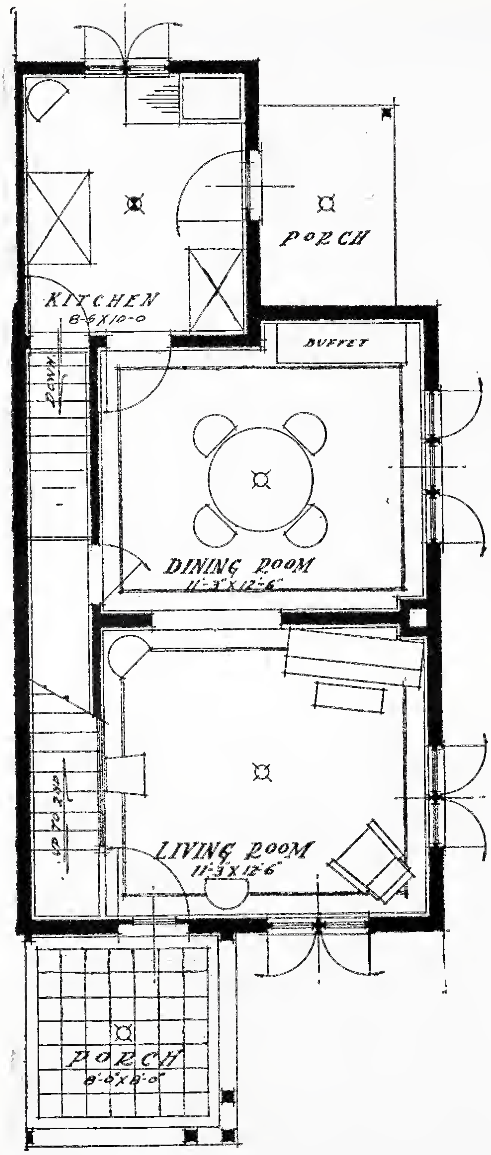
TYPE B—DOUBLE HOUSE.
Six Rooms and Bath; Unit, 14 Feet by 39 Feet.



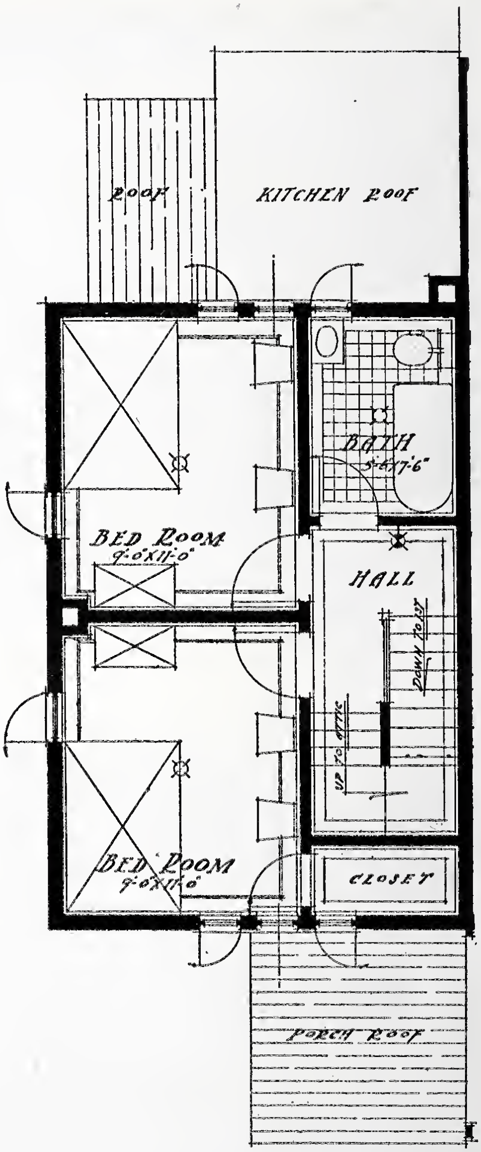
TYPE C—GROUP FOR SIX FAMILIES.
Each Unit, Six Rooms and Bath; House, 16 Feet by 33 Feet 6 Inches.



TYPE D—GROUP FOR FOUR FAMILIES.
Each Unit, Seven Rooms and Bath; House, 22 Feet by 24 Feet. The Best Type.

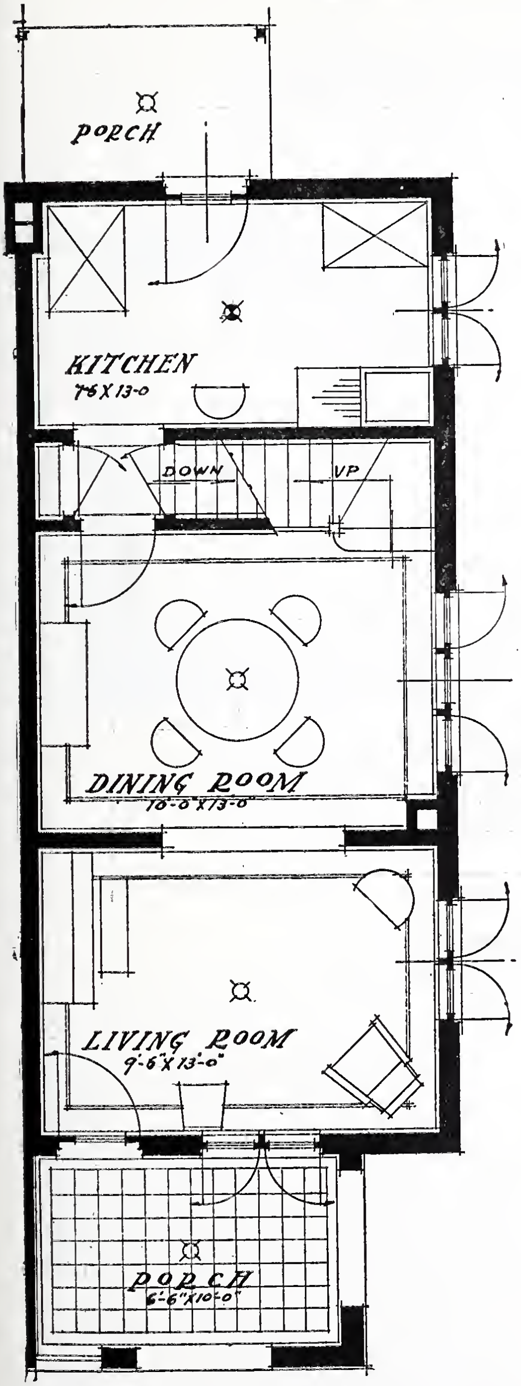


First Floor Plan.

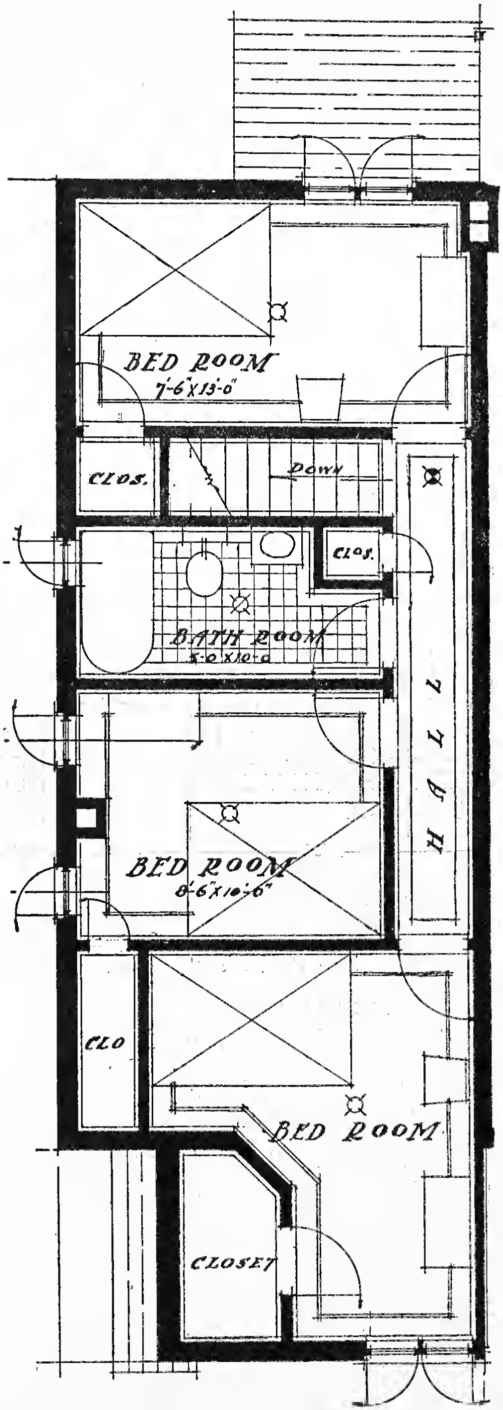


Second Floor Plan.

TYPE A — DOUBLE HOUSE.
Each Unit, Six Rooms and Bath;
Each House, 16 Feet by 24 Feet.

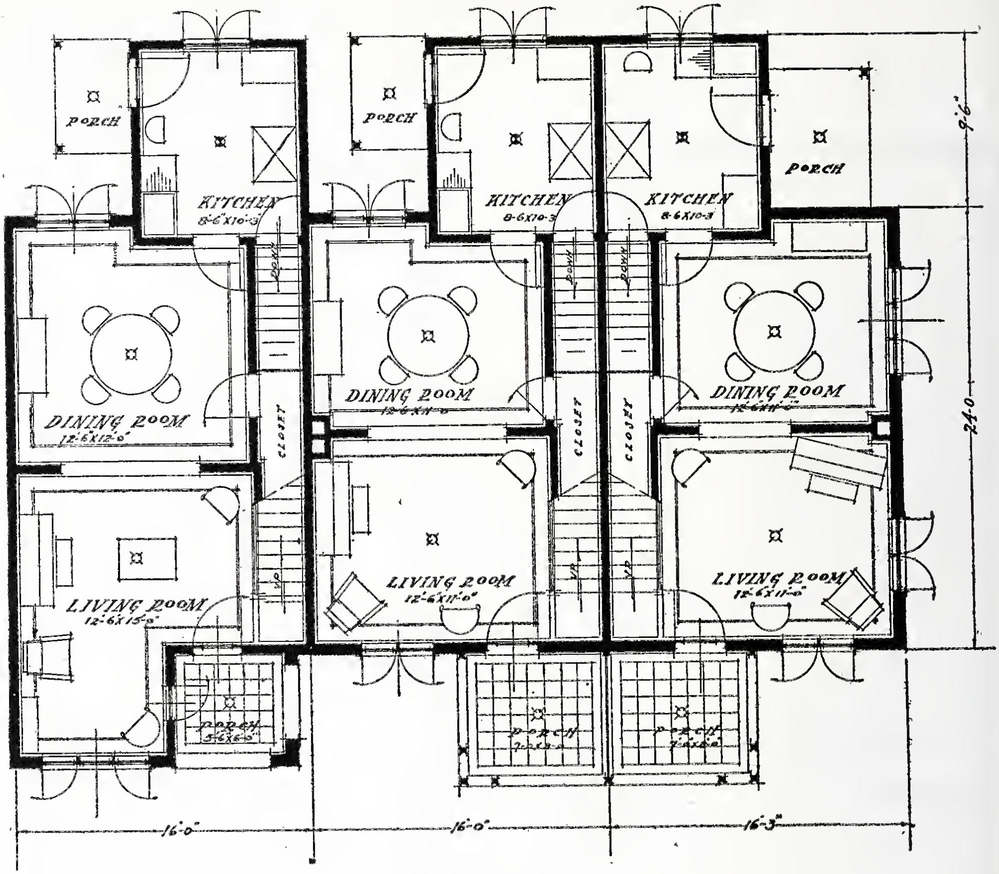


First Floor Plan.



Second Floor Plan.

TYPE B — DOUBLE HOUSE.
Each Unit, Six Rooms and Bath;
Each House, 14 Feet by 39 Feet.



First Floor Plan.
TYPE C—GROUP FOR SIX FAMILIES.
Each Unit, Six Rooms and Bath; Each House, 16 Feet by 33 Feet 6 Inches.

THE SIX-FAMILY HOUSE—TYPE C.

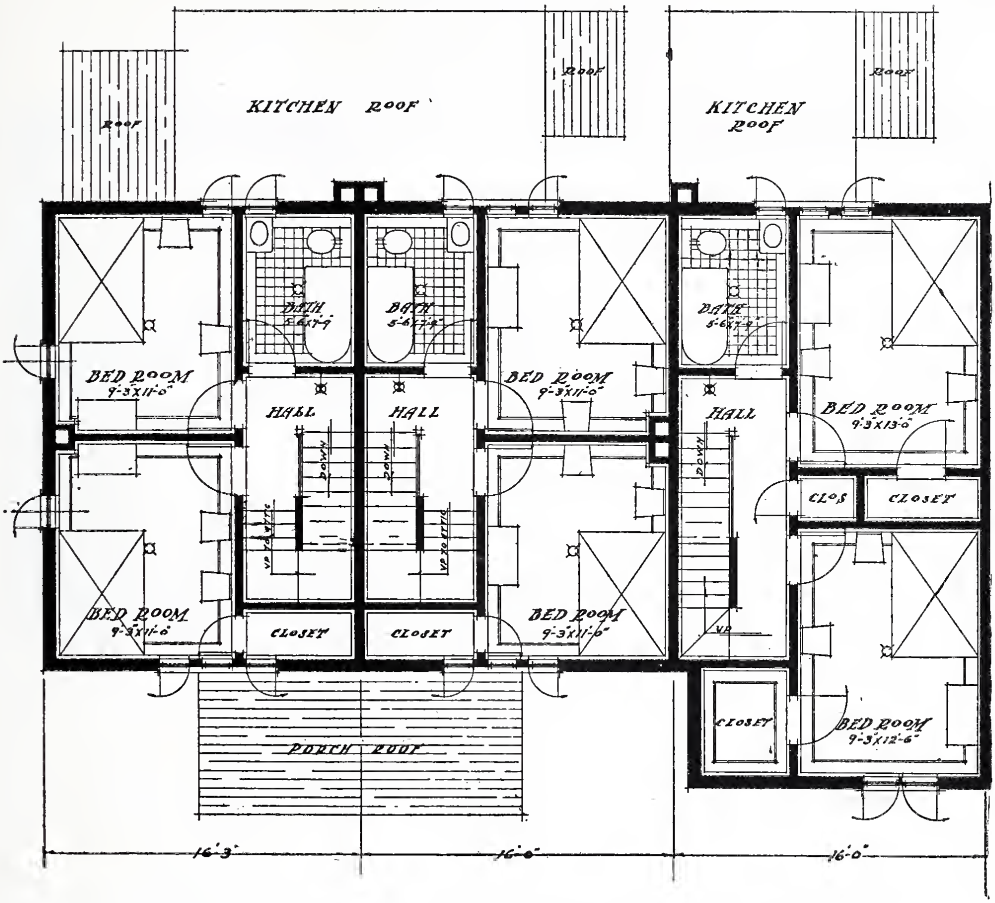
The remaining type, or Type C, is a modified form of Type A. The house proper is but two rooms deep, but on the ground floor there is the kitchen extension; the four end houses, two at each end, being of this type. The two middle houses vary slightly, having a front projection which gives much charm to the architectural design of the building and in this case affords rooms of a little larger size. Each unit of this type is built on a frontage of 16 feet, with a depth of 24 feet for the house proper, an additional depth of 9 ft. 6 ins. for the kitchen extension and a further additional depth of 6 feet for the front projection, making the house 33 ft. 6 ins. in depth at one point and 39 ft. 6 ins. deep at the point of greatest depth.

GROUPING OF HOUSES.

As will be seen we thus have a number of houses two in a row, four in a row and six in a row. Of the 100 houses already built, 26 have been built two in a row, 6 have been built four in a row and 4 have been built six in a row. So much for the arrangement of the houses.

ACCOMMODATIONS OFFERED.

Now with regard to the accommodations offered. Every house has a well lighted and ventilated, concrete floor cellar and a hot air furnace with pipes to each room on the first and second floors. The houses are equipped with

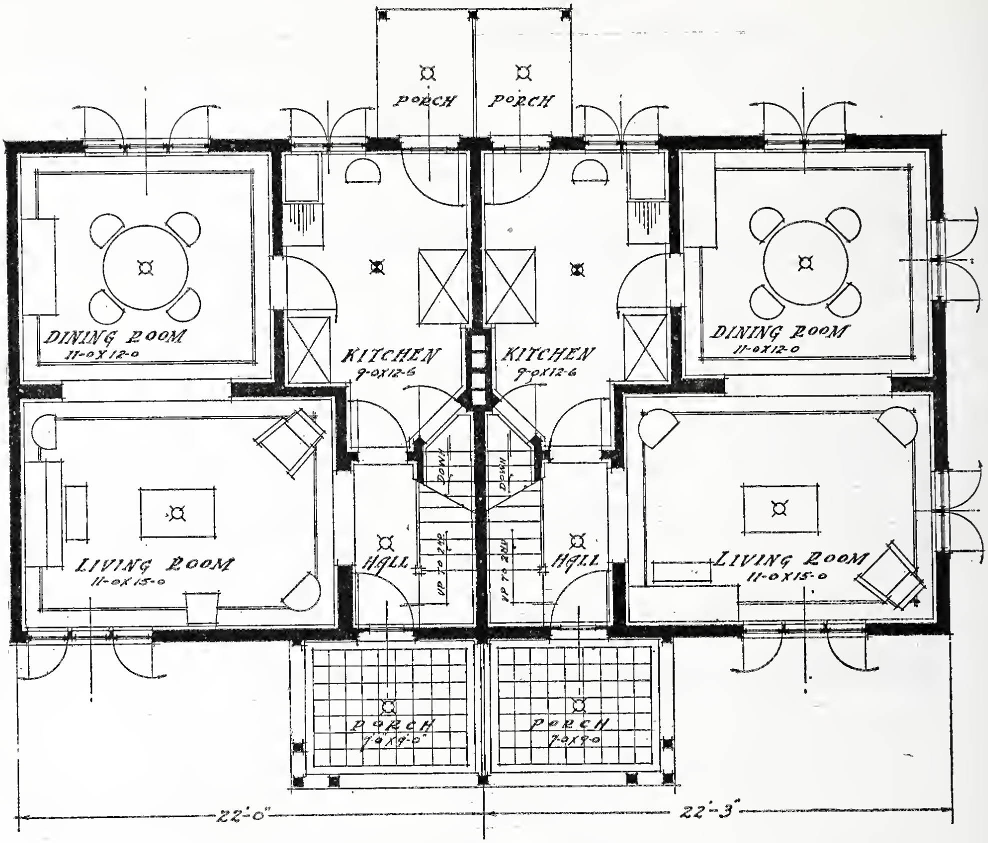


Second Floor Plan.
TYPE C—GROUP FOR SIX FAMILIES.
Each Unit, Six Rooms and Bath; Each House, 16 Feet by 33 Feet 6 Inches.

all modern devices. The bathroom is complete in every respect, with a porcelain tub, washbowl and toilet fixture of modern type. Kitchens are provided with a sink and porcelain washtub, the cover of the washtub acting as a drainboard for the sink. Kitchen dressers have not been provided, but it is stated that these can be furnished where the purchaser desires them at an additional charge of $25. In the opinion of the writer it would have been wiser to have provided a built-in dresser to contain china, glass and dishes in each kitchen, also a pot-closet, leaving to the tenants the providing of their own kitchen cabinet for the holding of supplies.

Every house has a front porch as well as a rear entrance to the kitchen. The treatment of the front porch has been handled with great skill. As a rule, the average piazza demanded by American custom destroys the architectural style of the building, but the architects in this case have with very great skill provided the necessary porches without in any way detracting from the appearance of the building. So, on the contrary, they have made the front porch add to the architectural design of the structure.

As well as having modern plumbing every house is equipped with gas pipes and also is wired for electricity. The fixtures are direct, with the exception of the dining room, which is semi-indirect, and the switches control the lights not only in

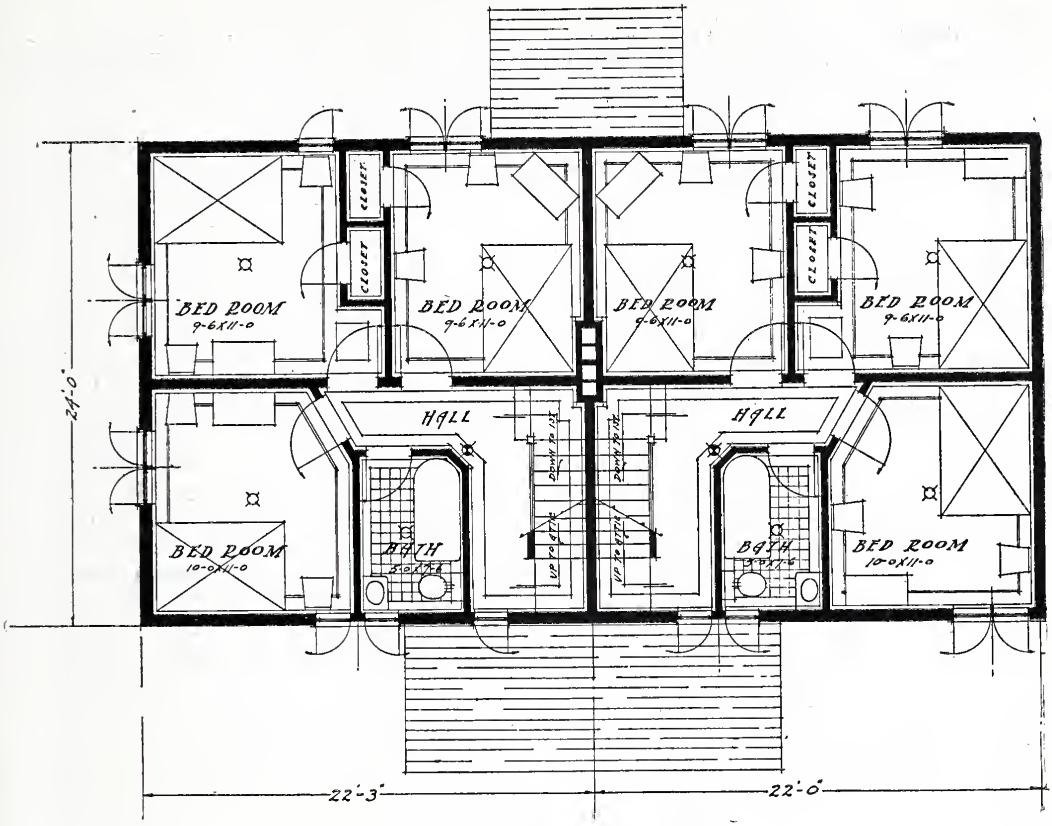


First Floor Plan.
TYPE D—GROUP FOR FOUR FAMILIES.
Each Unit, Seven Rooms and Bath; Each House, 22 Feet by 24 Feet.

the basement, but also on both the front and rear porches. This is a very real comfort to the housewife, who, at night when her husband may be away, or in the late hours of the short winter days, finds considerable concern about opening her door to everyone who knocks upon it. By turning on the switch from the inside of the house she is able to see who is out there before going to the door. It is little things like these that make or break developments of this kind.

The interior finish of the houses is varied—yellow pine, stained mission, golden oak and green. Most of the rooms have been designed so that the usual 9x12 rug, the size that is generally purchased by the workingman, can be easily accommodated and not leave a large floor space to be covered in some supplementary way. To Williamsport belongs the honor of having discovered the 9x12 rug as a standard in determining the size of rooms in a workingman's dwelling. It is a good, practical method.

Clothes closets are provided in all of the houses. While much more generous provision has been made in this respect than is found in the usual commercially built workingman's dwelling, this is one of the features in which the houses might be improved. In some of the types there are no clothes closets in each of the bedrooms. In one type, the only clothes closet opens off one of the bedrooms, thus forcing other members of the family to go through an occupied bedroom in order to get their clothes. The space provided for linen closets is not always adequate. There should be a linen closet on the second story of every workingman's



Second Floor Plan.
TYPE D—GROUP FOR FOUR FAMILIES.
Each Unit, Seven Rooms and Bath; Each House, 22 Feet by 24 Feet.

dwelling. The workingman's wife, just as much as any other man's wife, wants a linen closet for the storage of linen, blankets and similar household supplies.

TYPE OF CONSTRUCTION.

The houses have all been built with outer walls of fireproof material, there being no frame construction in the dedevelopment. This means greater permanency, less cost for upkeep and less depreciation. Hollow tile has been used for the cellar walls, foundation side walls and division walls between the houses, thus not only affording greater strength and fire safety but providing the necessary air space so essential for warmth in winter and coolness in summer and protecting against dampness in all seasons of the year. Some of the houses are developed with an artistic stucco finish in white or gray on top of the hollow tile; others, with pentex treatment. It is believed that because of this method of construction the houses will be less expensive to heat than houses built of frame or of solid walls. The fire risk has thus been reduced to a minimum. In fact the smallest possible amount of wood is used on the exterior of the houses. Even the roof overhangings only being faced with wood, the under side being stucco. The roofs are of slate.

THE ECONOMIC SIDE.

The acid test of a development of this kind is to be found on its economic side. Given good judgment and taste and intelligence, it is always possible to build houses that are attractive architecturally and possess charm; but to build such houses at a cost within the purchasing power of the skilled mechanic is a totally different question. The extent to which this has been done is the real test of such an enterprise. Sawyer Park meets this test and comes out of it with flying colors. It is an object lesson for other communities, to note the business-like way in which the project has been handled from the start. The various prospectuses issued by the Board of Trade, when the project was first suggested in March, 1917, are models in manner of presentation and soundness of treatment that may well be followed by persons contemplating similar developments.*

The lowest priced house has been built so that it can sell for $2,935, and the highest priced house for $3,335. The great majority of the houses sell for $3,185 and $3,285. This means that a mechanic by an initial payment of $300 down and a monthly payment of $30 thereafter can immediately enter into possession of a high-class, modern home of six rooms and bath, and at the end of 10 years own it free and clear. This result has been accomplished through buying material at pre-war prices in car-load lots at wholesale rates at costs much less, of course, than would prevail today. All unnecessary middlemen's profits have been eliminated. The investors in the property have deliberately limited their return to 6% on their money and the contract made with the construction company has been so fair and equitable as to reduce to a minimum the necessary overhead expenses connected with the construction of the houses and the development of the property.

The houses have frankly been built to sell and not to rent. The projectors of the enterprise have been of the opinion that it was more advantageous to the community, as well as to the workingman, that he should own his own home. That a community of home-owners was preferable to a community of "renters."

At the time of going to press with this article the sale of the houses was in progress. The writer believes that ultimately the company will find, as so many others have found, that there are very distinct advantages in renting dwellings of this character—advantages which outweigh the advantages to be obtained from selling the houses. Management and upkeep are so essential a part of the success of any such scheme that it is an almost universal experience that, if the property is to be kept up to the highest standard, the projectors of the enterprise must retain control. When houses are sold, control is surrendered. Under such circumstances property of this kind is apt to deteriorate and depreciate, especially where restrictions have not been imposed. One workingman to whom a house is sold may have high standards and keep his property in good condition. The man next door to him may be shiftless in character and untidy; he may have no desire to plant a garden, to grow flowers or to keep the lawns trimmed and well cut. Instead he may keep chickens, horses, cows or pigs in his backyard; or he may dump piles of ashes and other refuse material there. He may build an unsightly board fence or one with scraps of sheet iron to fence in his vegetable garden. The effect of all this is to drive the orderly and tidy people away. Thus the whole class of occupancy is in danger of gradually changing, undesirable occupants creeping into the settlement. After the company once sells a house to a man there are no means of preventing him from reselling it.

Under such conditions the Garden Village loses its character; while it still remains a village, the garden vanishes.

This has been the general experience, not only in this country but in Great Britain, an experience that has led to the copartnership scheme of property ownership by which, instead of there being individual ownership of individual houses, and though actually paid for by the occupiers of the dwellings, nevertheless the entire community owns them, so that its proper upkeep and management is secured; for, no individual owns his house but only its value in stock of the company. The result is that all the advantages of the individual's ownership of property in having a stake in the community are maintained, while the disadvantages just cited are overcome; with the added advantage that the objection to the purchase of houses, which is being more and more often advanced by the workingman, namely, that it interferes with mobility of labor and chains him to his job, is entirely overcome.

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*See "Prospectus of the Williamsport Realty Company" and "Report of a Proposed Industrial Village at Williamsport" issued by the Board of Trade under date of March 15, 1917.

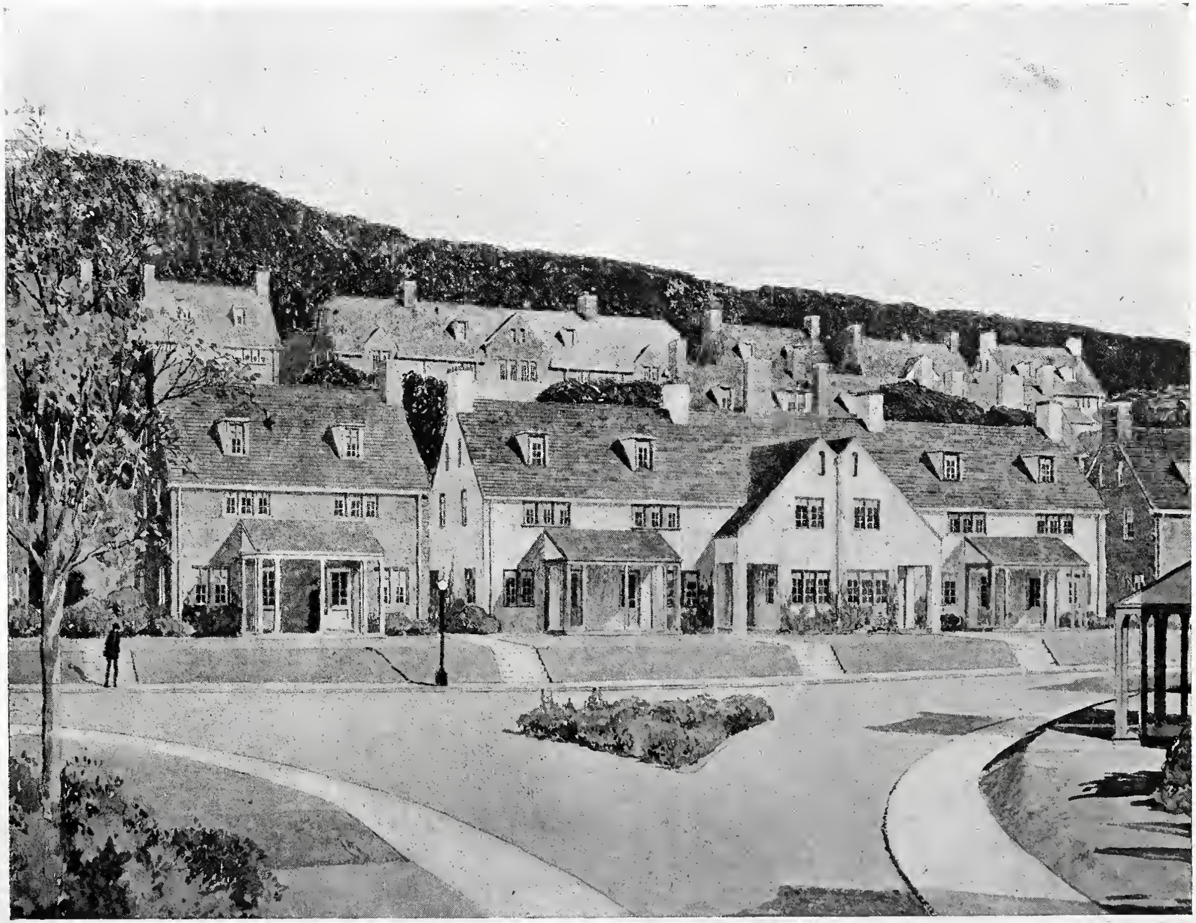
It is to be regretted that some such plan was not developed in connection with Sawyer Park; and it is to be hoped that even now restrictions will be imposed in the deed which will protect the purchasers of the houses in the perpetual enjoyment of the amenities of this Garden Village.

CONSTRUCTION SIDE OF THE PROBLEM.

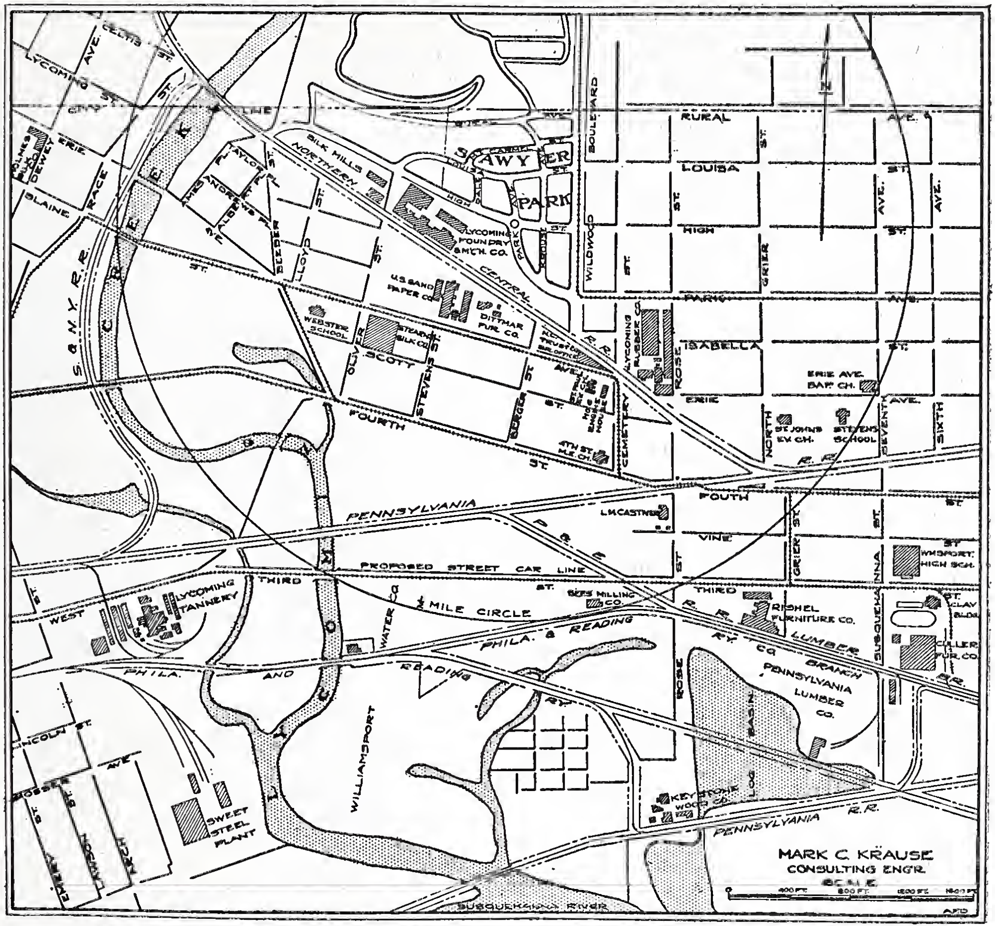
One of the reasons for the success of this development has been the skill and efficiency with which the construction company, in this case the Dodson Realty Corporation of Bethlehem, Pa., has handled the work. The directors of the Housing Company decided wisely at the beginning of the undertaking to make a contract with one concern for the entire development and selected the Dodson Realty Corporation as the company to whom they entrusted the supervision of the entire scheme. The terms on which this contract was made represent a fair basis for similar contracts in similar developments and for this reason the following summary of the terms of the contract is given:

> The contract with the Dodson Realty Corporation provides that they furnish plans and specifications for land development, including:
>
> (a) Plans of streets, lots, parks, etc.
> (b) Locations and grades for streets and sidewalks.
> (c) Cross-section details of streets, sidewalks, curbs, gutters.
> (d) Landscape plans—(street planting).
> (e) Plan of street lighting system.
>
> It is agreed that in case the contract is cancelled by either party, the plans of Dodson may be used for Williamsport, on the basis of 4% for originals and 2% for repeats without superintendence on the cost of construction, on which cost of construction no commission has been paid to Dodson.
>
> Dodson further agrees to perform the following services, for which he receives a percentum on expenditure for construction as shown below:
>
> (a) Prepare four sets preliminary plans of land improvements and houses, showing location of houses on plot plan.
>
> (b) Furnish four sets of detailed plans and specifications for land improvements and houses when preliminary plans have been approved.
>
> (c) Provide an experienced field superintendent, who shall be in constant attendance during the progress of the physical operation, and provide such other assistants as may be required for efficient supervision, direction and administration, beyond recognized duties of the contractor.
>
> (d) Examine all proposals, estimates and contracts in connection with the work, and give Williamsport the benefit of Dodson's experience in all matters pertaining to the operation.
>
> (e) Have its representative, experienced in various branches of the work being done, visit the operation from time to time, and make suggestions for the general welfare and progress of the operation.
>
> Williamsport agrees to pay Dodson for its services under this contract a percentage of the amounts expended for materials and labor which actually enter into construction during the term of this agreement upon the following basis:
>
> Ten per cent. of a maximum of $200,000, so expended during the first year of this agreement, or until $200,000 is so expended.
>
> Five per cent. of such amounts in excess of $200,000, so expended during the duration of this agreement.
>
> Williamsport shall pay Dodson the amount specified above in manner following:
>
> (a) $2,000.00 when preliminary drawings for land improvements and house plans are approved.
>
> (b) $5,000.00 when detailed plans and specifications for land improvements and houses are completed and approved.
>
> (c) 6½% of expenditures for materials as shown by the bills when and as they are checked into construction account, and 6½% of labor payrolls when and as they are reported as having been paid, until such time as said materials and labor accounts amount to the sum of $200,000. After the first $200,000 have been expended, and during the continuation of this agreement, 5% of such amounts so expended or charged shall be paid in the same manner and form.

It appears from a perusal of these terms that all details of the enterprise, after initial decisions have been reached, such as furnishing of expert architectural service, of the city planning services and



THE TERRACES CLINGING TO THE HILLSIDES ADD
TO THE CHARM AND GIVE ATTRACTIVE OUTLOOK.



SAWYER PARK IS ACCESSIBLE TO THE HEART OF THE CITY.
Map Showing a Half Mile Radius.

of all that usually goes with a development from acreage property into building sites, have been placed in one hand, thus eliminating unnecessary middlemen's profits and reducing overhead charges to an absolute minimum, at the same time affording to the contractor a proper reward for his services.

An interesting commentary on how the war has affected building is found in the statement of the architect that he closed a contract for 50 houses similar to Type D on April 16th, at a price $269 per dwelling for material and $208 per dwelling for labor, or a total increase of $477 per dwelling over the cost of these buildings built a year ago. Some of this advanced cost was due to different costs in a different locality.

It is interesting to note that this village of 100 houses was under roof in six months' time and that it had been brought to completion in a reasonable time notwithstanding the unanticipated difficulties of the extreme weather encountered during last winter. The building company has not only furnished unusual intelligence and skill in its work, but has also established standards in methods of record keeping and presentation of facts which may well serve as a model for similar undertakings. Through the courtesy of the Dodson Realty Corporation we are able to present here three statistical charts showing various phases of the costs that entered into this project. Table I shows what may be termed the Development Costs, not only in totals, but also on a unit basis of running foot cost. Thus we are able to see at a glance the cost of house sewers per running foot, of storm sewers, of sidewalks, of curbs, of gutters, of electric wiring and of all the elements that enter into the development of property of this kind.

Table III shows in a similarly striking way the cost of labor and material of various kinds for one dwelling, based on the cost of 100 dwellings. This is an impressive, graphic presentation and is invaluable to persons projecting similar enterprises, in affording a basis of what such costs should be.

Here we have presented under the heading of "Material" the actual cost per house of the excavation, concrete, tile work, rough lumber, finished lumber, plaster, painting, slate roofing, sheet metal, hardware, electric work, heating, plumbing, hauling, structural steel and miscellaneous. Under each one of these various categories in parallel columns are presented the costs for labor for one house, not only the cost, but also the number of hours of labor taken in each kind of work; from which it appears that the average dwelling containing 13,600 cubic feet was built at a rate of 14.6 cents per cubic foot, not including, however, contractor's profit nor architect's fees nor certain extras such as cement floors, gas range, kitchen cabinet and medicine cabinet. This would give the average cost of a house without the contractor's profit in round figures at $2,000 ($1,985.60).

Table IV shows in a comparative way the relative cost of labor and material entering into each one of these various categories, with the percentage of the total cost of each; thus we note that the tile work, for example, was 24.8% of the total cost of the building and that of this cost materials constituted 63% and labor 37%.

Of course to these actual costs of the building must be added the overhead charges, interest on the money invested and the important cost of land and land development, especially the latter, as well as the carrying charges on the buildings during the ten-year period of sale.

LAND COST.

The facts with regard to the land cost and the cost of developing the acreage property into suitable sites are singularly instructive. The land, amounting to 36.71 acres, was purchased for $23,235, giving a cost of raw land of $636 an acre. To develop 24 acres of this land cost approximately $2,000 an acre as follows:

Cost per acre for House Sewer....	$405.64
" " " " Storm Sewer....	385.24
" " " " Sidewalks	236.50
" " " " Curbing	333.48
" " " " Gutters	137.10
" " " " Electric Lighting	106.66
" " " " Streets	630.00
" " " " Alleys	43.00
" " " " Planting	32.66
Total cost per acre............	$2,311.28

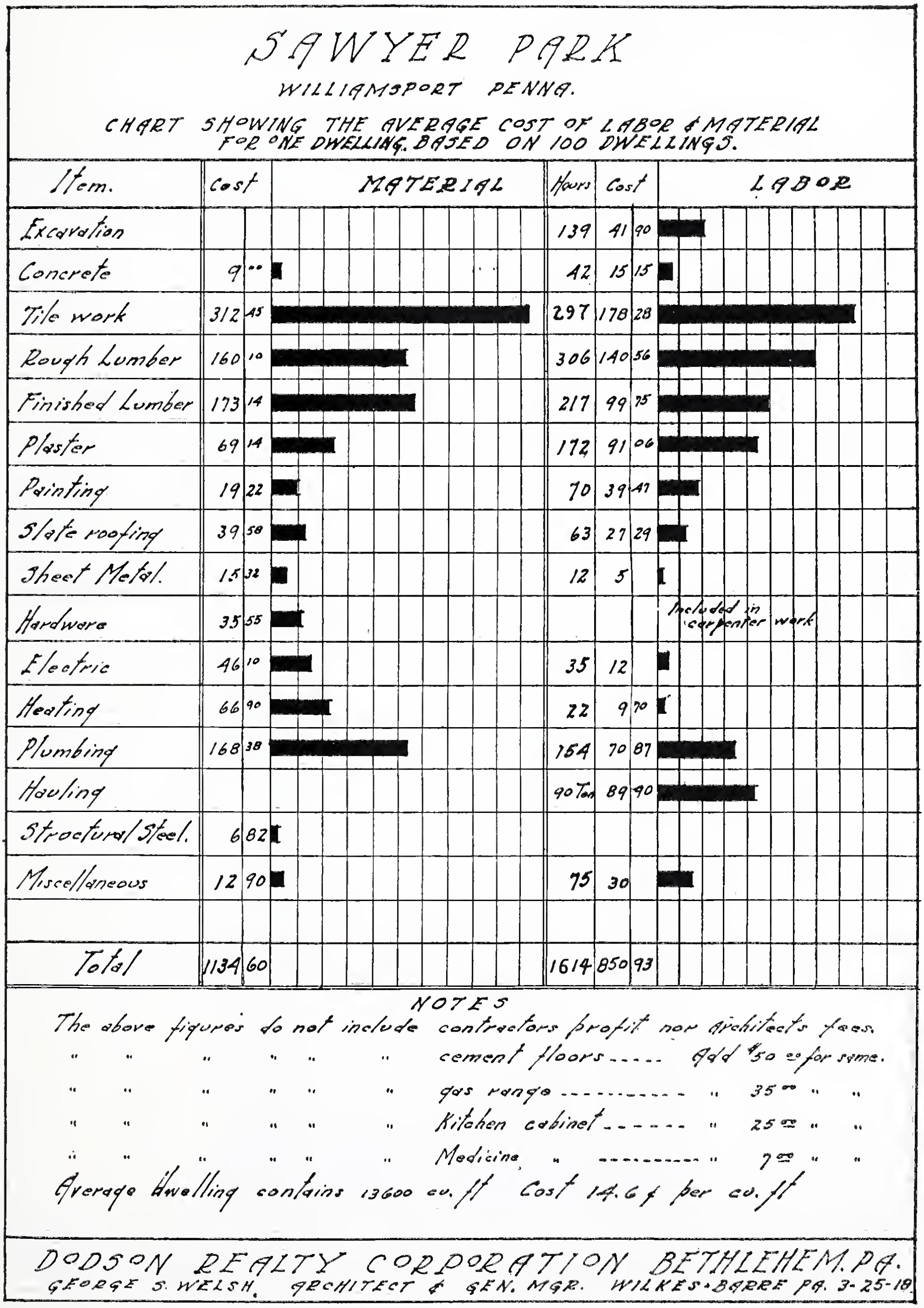
The city will refund for lights, street intersections, etc., making the cost approximately $2,000 per acre or $166 per lot, not including carrying charges or overhead.

16.00 acres in lots.
7.64 acres in streets.
.32 acres in alleys.

23.98 or approximately 24 acres in above estimate.
or approximately 304 lots in above estimate.
12 lots to an acre.
Total length of streets, 7,740 feet.
Total length of alleys, 4,140 feet.
Total length of sidewalks, 11,752 feet (4½ ft. wide).

Our single-tax friends, who are so wont to hold that low land cost is the solution of the housing problem and that the keeping of land out of use is responsible to so large an extent for the inability to develop workingmen's dwellings at a price within the purchasing power of the workingman, should take to heart and ponder these figures, for they will then discover what has been patent for many years to all persons who have had experience in developing acreage property, that the heavy cost is not in the cost of the land, but in the cost of developing that land.

Could this cost of developing property—of building sewers, laying sidewalks, curbs and gutters, of installing electric lights and building streets and alleys—



SAWYER PARK
WILLIAMSPORT PENNA.
CHART SHOWING THE AVERAGE COST OF LABOR & MATERIAL
FOR ONE DWELLING. BASED ON 100 DWELLINGS.

Item.	Cost		MATERIAL	Hours	Cost		LABOR
Excavation				139	41	90	
Concrete	9	00		42	15	15	
Tile work	312	45		297	178	28	
Rough Lumber	160	10		306	140	56	
Finished Lumber	173	14		217	99	75	
Plaster	69	14		172	91	06	
Painting	19	22		70	39	47	
Slate roofing	39	58		63	27	29	
Sheet Metal.	15	32		12	5		
Hardware	35	55					Included in carpenter work
Electric	46	10		35	12		
Heating	66	90		22	9	70	
Plumbing	168	38		154	70	87	
Hauling				90 Ton	89	90	
Structural Steel.	6	82					
Miscellaneous	12	90		75	30		
Total	1134	60		1614	850	93	

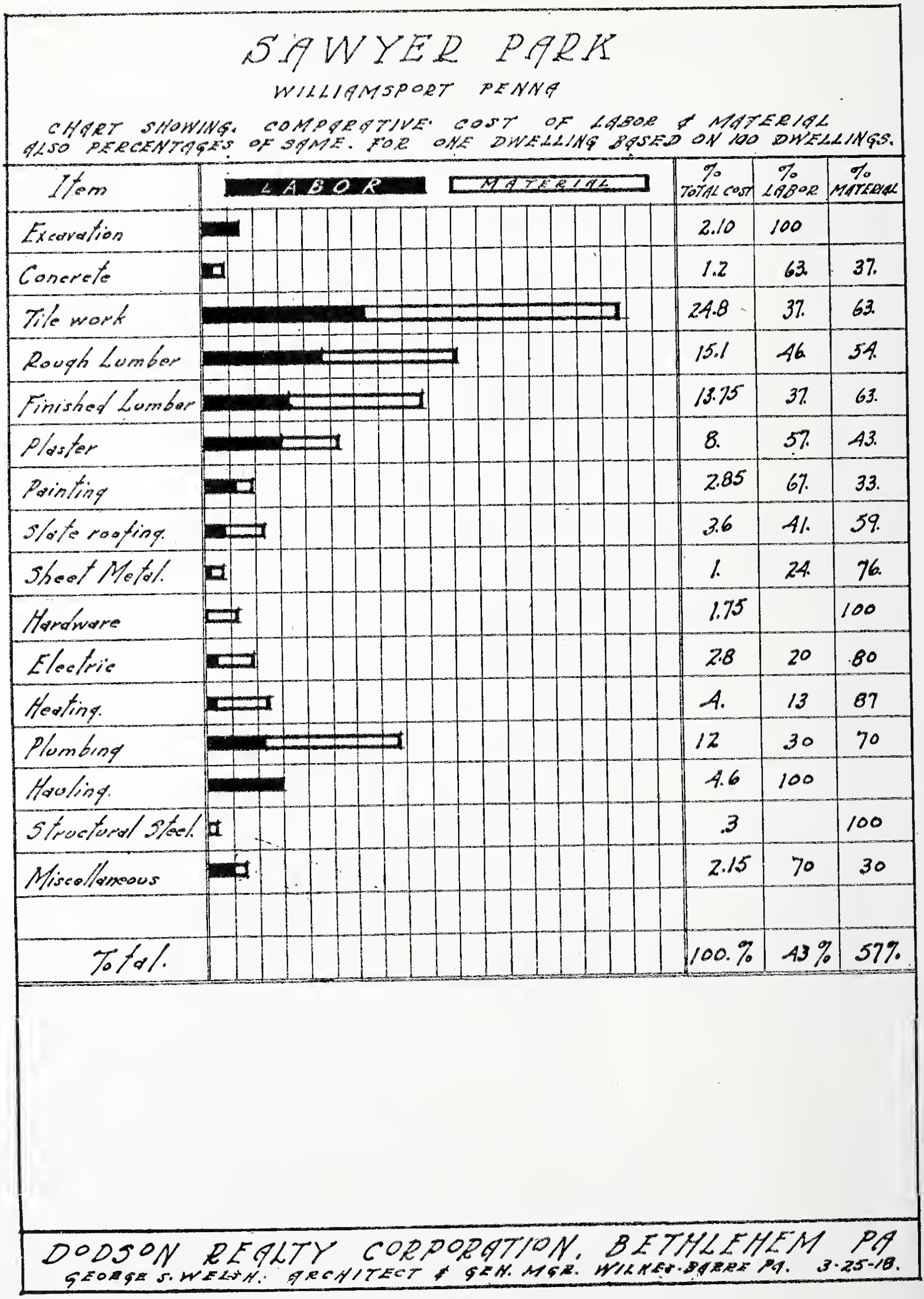
NOTES

The above figures do not include contractors profit nor architects fees.
" " " " " " cement floors ..... Add $50 00 for same.
" " " " " " gas range .... " 35 00 " "
" " " " " " Kitchen cabinet ...... " 25 00 " "
" " " " " " Medicine " .... " 7 00 " "

Average dwelling contains 13600 cu. ft Cost 14.6¢ per cu. ft

DODSON REALTY CORPORATION BETHLEHEM. PA.
GEORGE S. WELSH. ARCHITECT & GEN. MGR. WILKES-BARRE PA. 3-25-18

TABLE III.—COST CHART, LABOR AND MATERIALS.



SAWYER PARK

WILLIAMSPORT PENNA

CHART SHOWING COMPARATIVE COST OF LABOR & MATERIAL
ALSO PERCENTAGES OF SAME. FOR ONE DWELLING BASED ON 100 DWELLINGS.

Item	% Total Cost	% Labor	% Material
Excavation	2.10	100	
Concrete	1.2	63.	37.
Tile work	24.8	37.	63.
Rough Lumber	15.1	46	54.
Finished Lumber	13.75	37.	63.
Plaster	8.	57.	43.
Painting	2.85	67.	33.
Slate roofing.	3.6	41.	59.
Sheet Metal.	1.	24.	76.
Hardware	1.75		100
Electric	2.8	20	80
Heating.	4.	13	87
Plumbing	12	30	70
Hauling.	4.6	100	
Structural Steel.	.3		100
Miscellaneous	2.15	70	30
Total.	100.%	43%	57%.

DODSON REALTY CORPORATION, BETHLEHEM PA
GEORGE S. WELSH. ARCHITECT & GEN. MGR. WILKES-BARRE PA. 3-25-18.

TABLE IV.—RELATIVE COSTS, LABOR AND MATERIALS.

have been defrayed by the City of Williamsport *in toto* it would have been possible to have sold these houses to the workingman at a materially lower rate.

TO SUM UP.

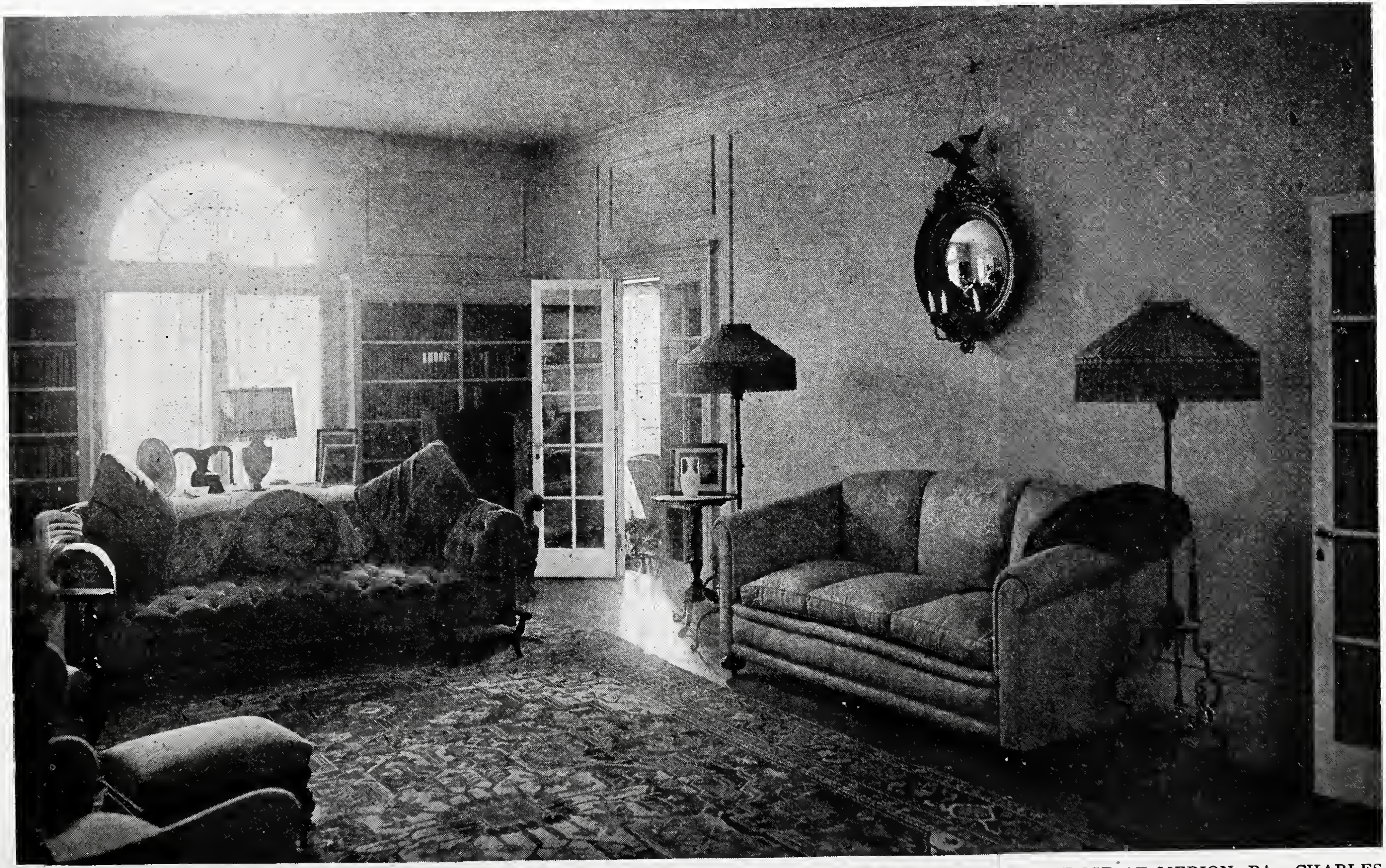
Sawyer Park is a very distinctive achievement of which the City of Williamsport may well be proud. The city owes a debt of gratitude to the men of vision and courage who undertook this project in the face of the opposition and conservatism which usually prevail in all communities.

It is the nearest approach that this country has to the best English Garden Village developments.

It is a genuine Garden Village, architecturally attractive, with buildings that possess charm and distinction.

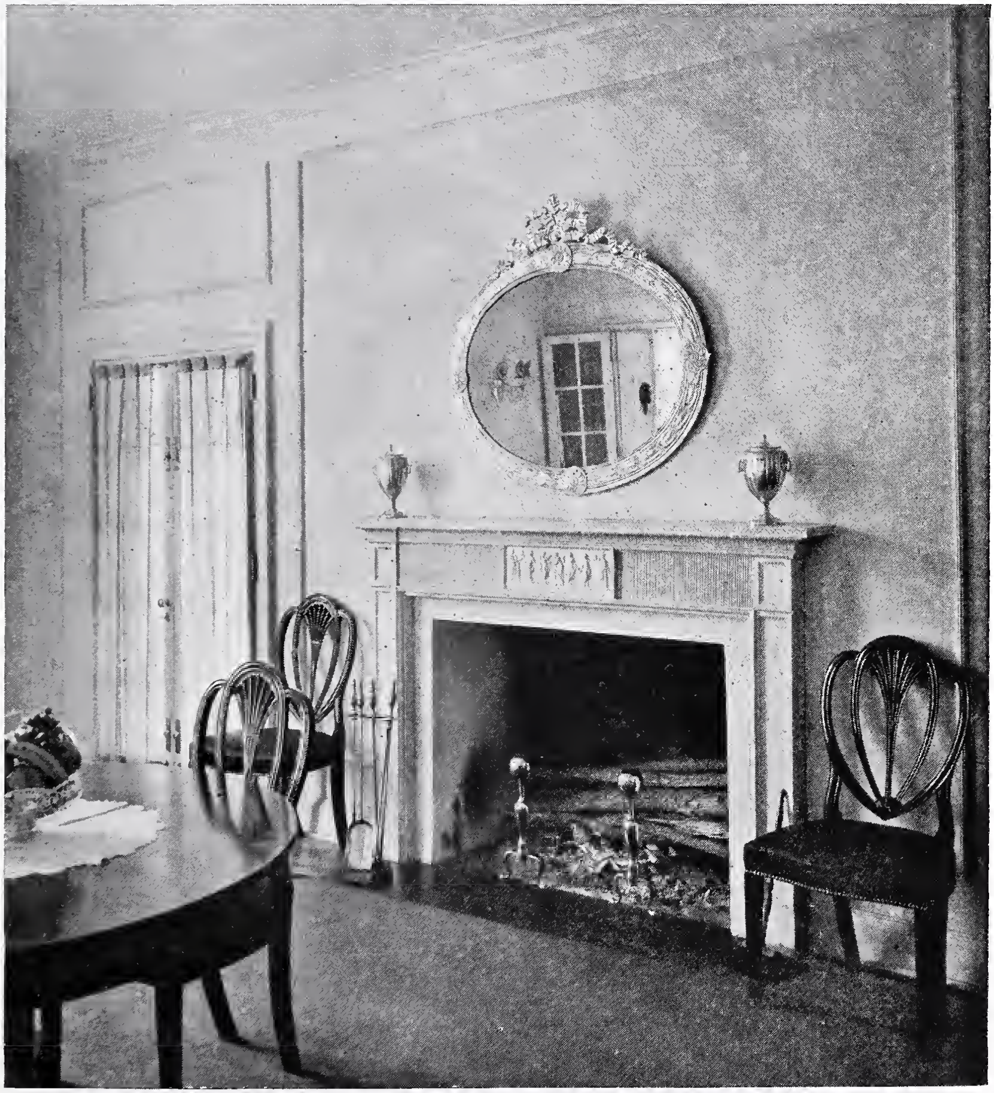
The houses are well and substantially built at a minimum cost, well within the purchasing power of the skilled worker. The development follows the best city planning practice.

It is on a scale sufficiently small to make similar developments possible in other communities throughout the country, while the methods which have been employed by the business men of Williamsport in organizing and carrying out the project, the terms of the contract with the construction company and the methods employed by that company in carrying on the work and in keeping track of costs and other records of the expense of the development may well serve as models for similar enterprises.

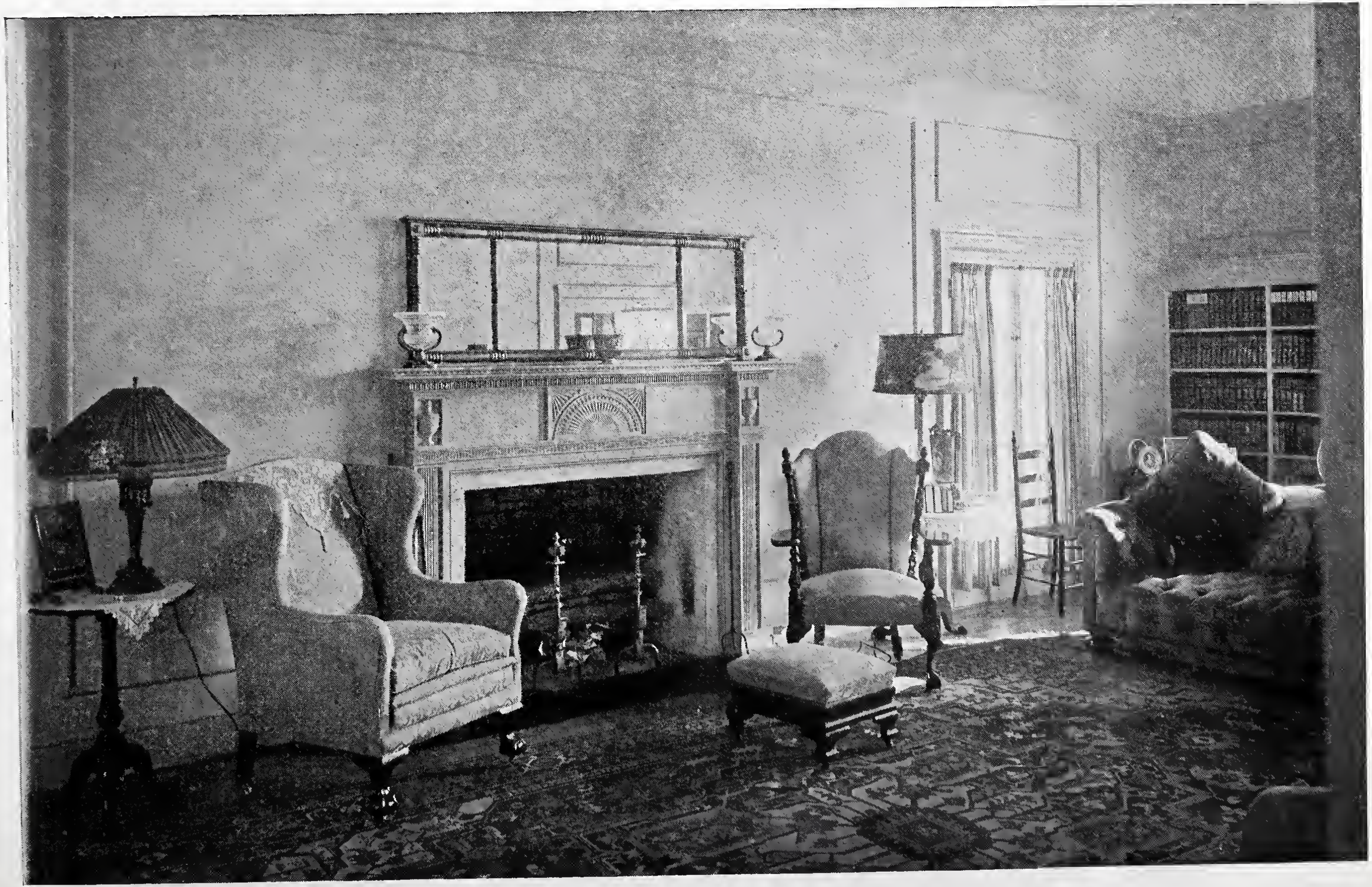


DRAWING ROOM—RESIDENCE AT MERION, PA. CHARLES WILLING, OF FURNESS, EVANS & CO., ARCHITECT.

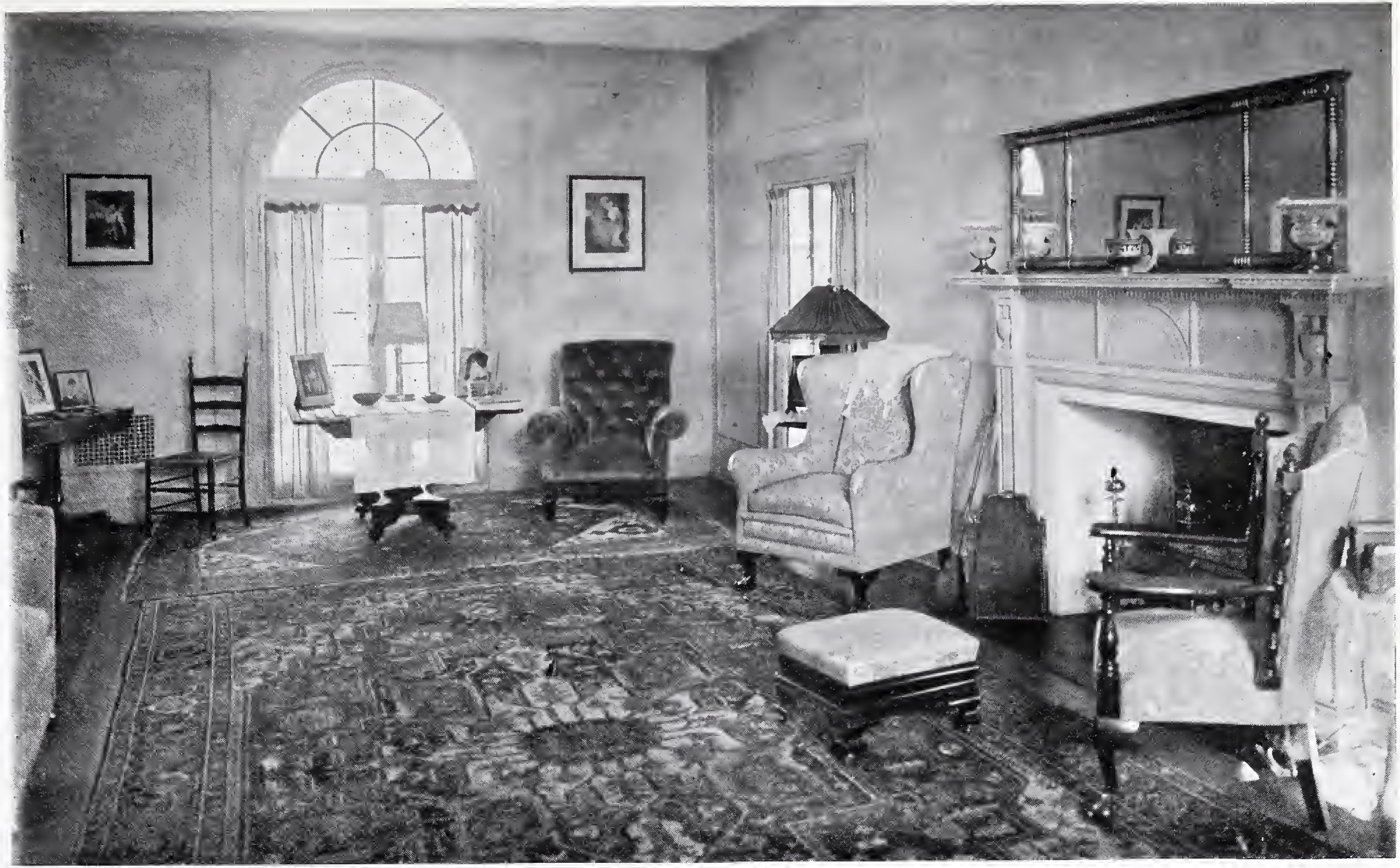
PORTFOLIO OF CVRRENT ARCHITECTVRE



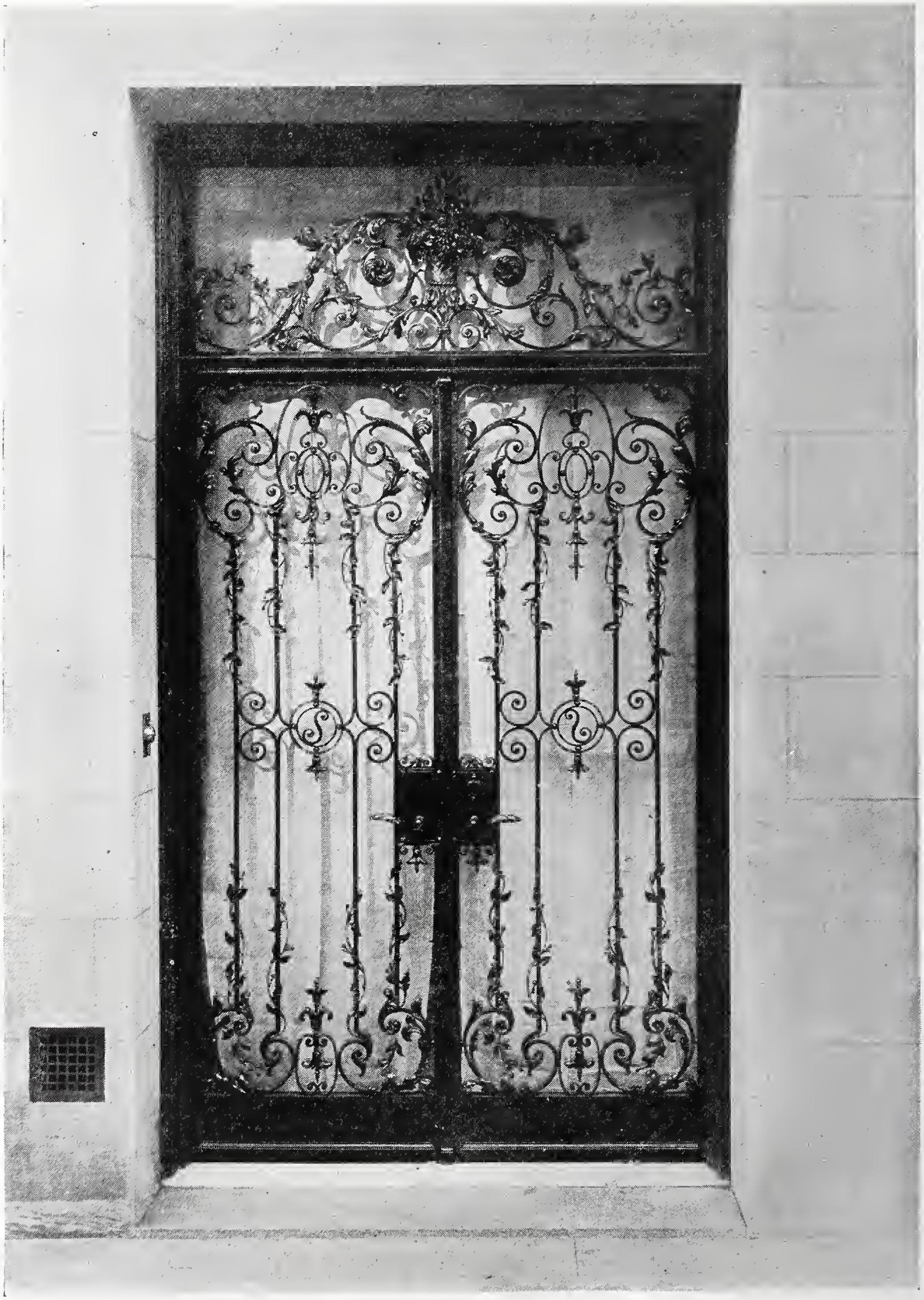
FIREPLACE IN DINING ROOM—RESIDENCE AT MERION, PA. CHARLES WILLING, OF FURNESS, EVANS & CO., ARCHITECT.



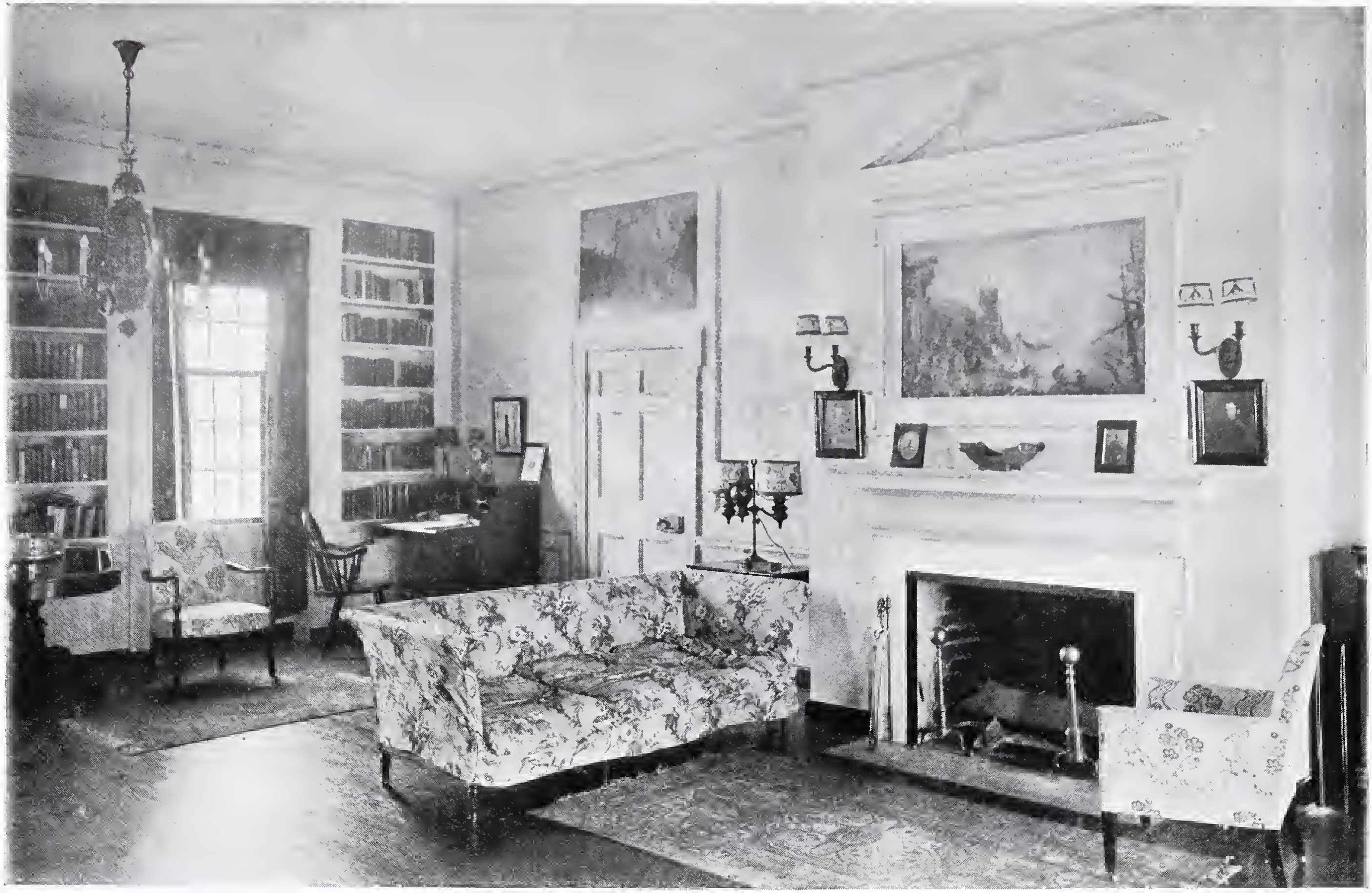
DRAWING ROOM—RESIDENCE AT MERION, PA. CHARLES WILLING, OF FURNESS, EVANS & CO., ARCHITECT.



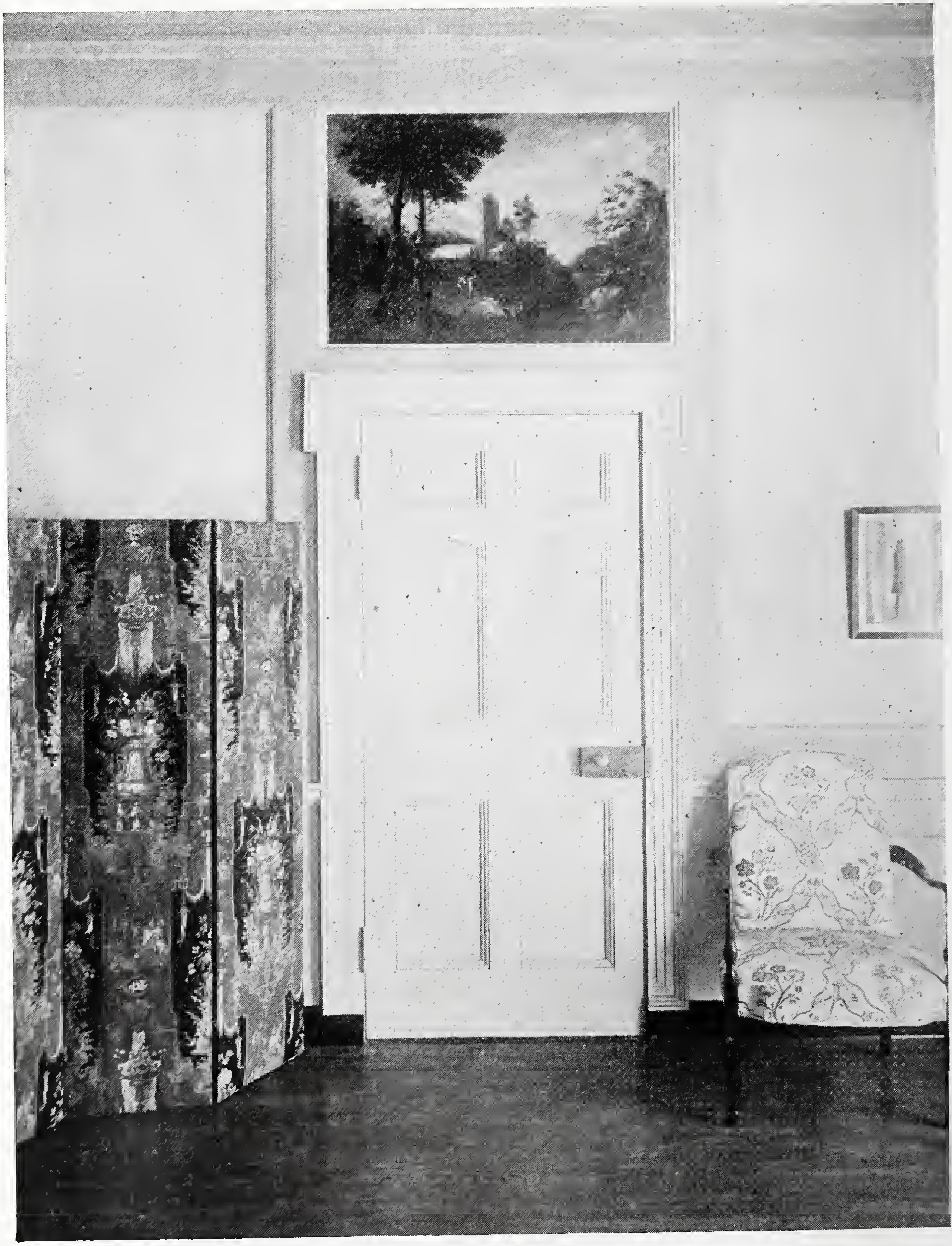
DRAWING ROOM—RESIDENCE AT MERION, PA. CHARLES WILLING, OF FURNESS, EVANS & CO., ARCHITECT.



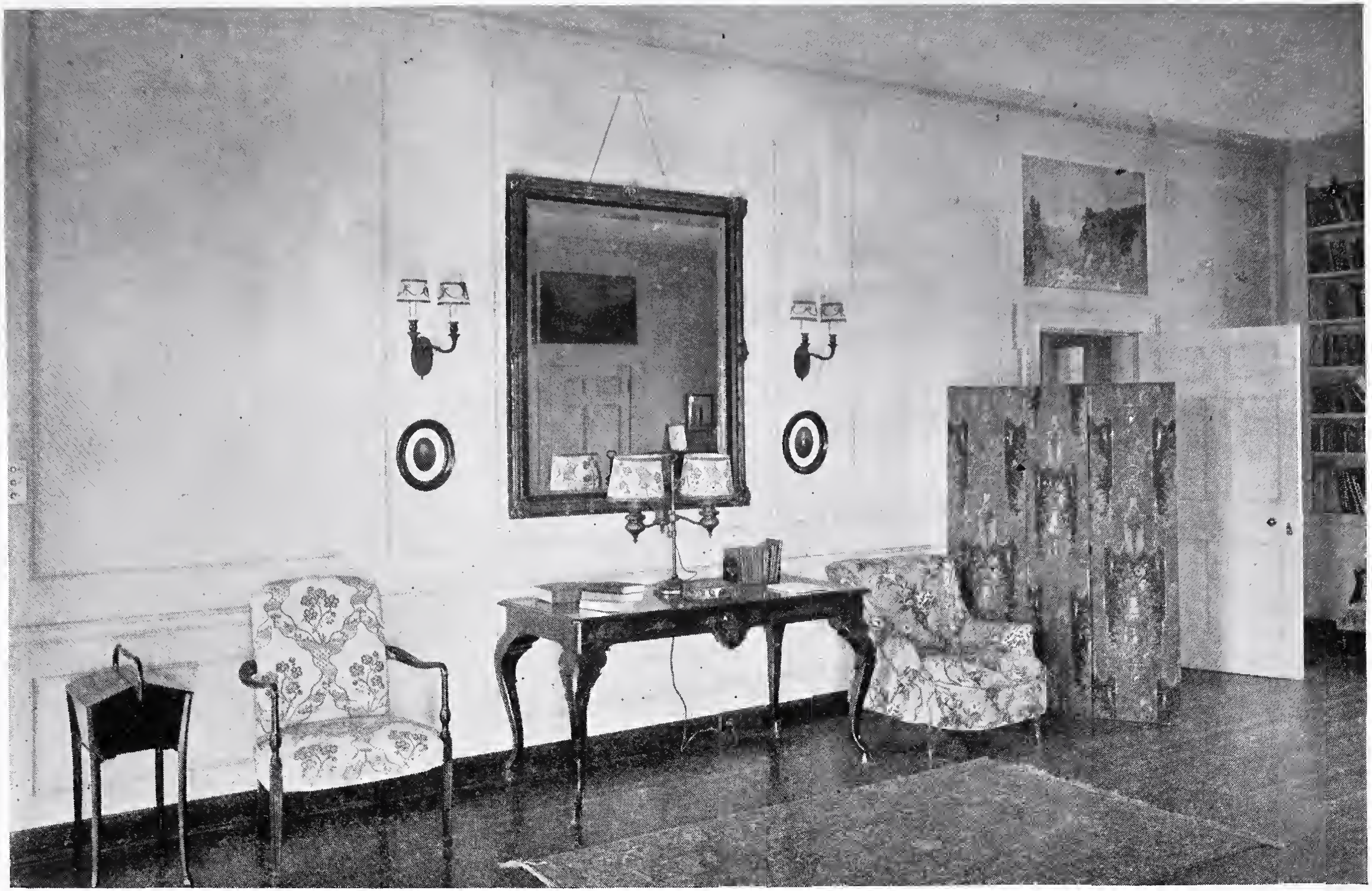
IRONWORK DESIGNED BY CROSS & CROSS, ARCHITECTS, FOR THE RESIDENCE OF CHARLES H. SABIN, ESQ., NEW YORK CITY.



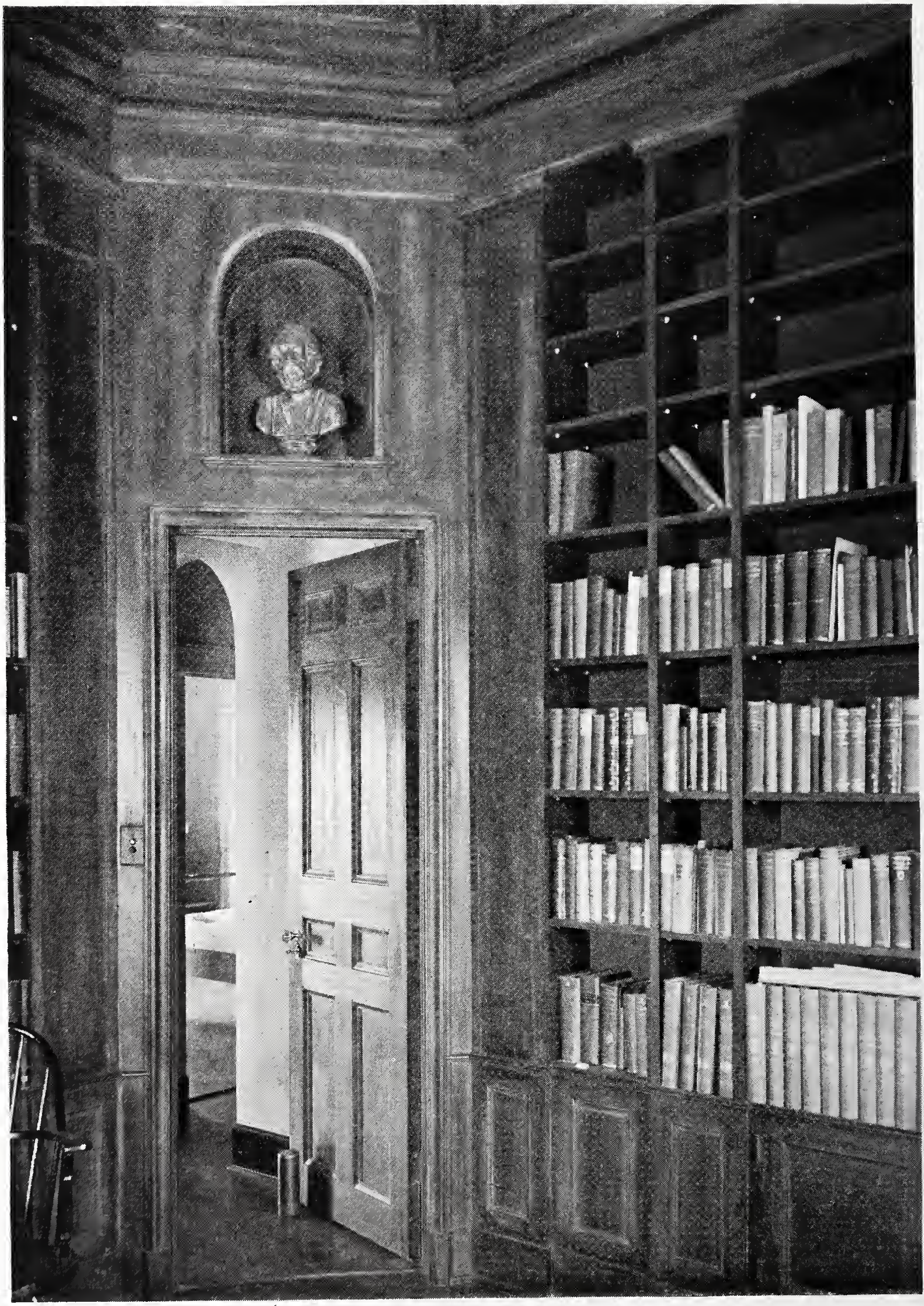
DRAWING ROOM—RESIDENCE OF COL. JENNINGS C. WISE, RICHMOND, VA. WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT.



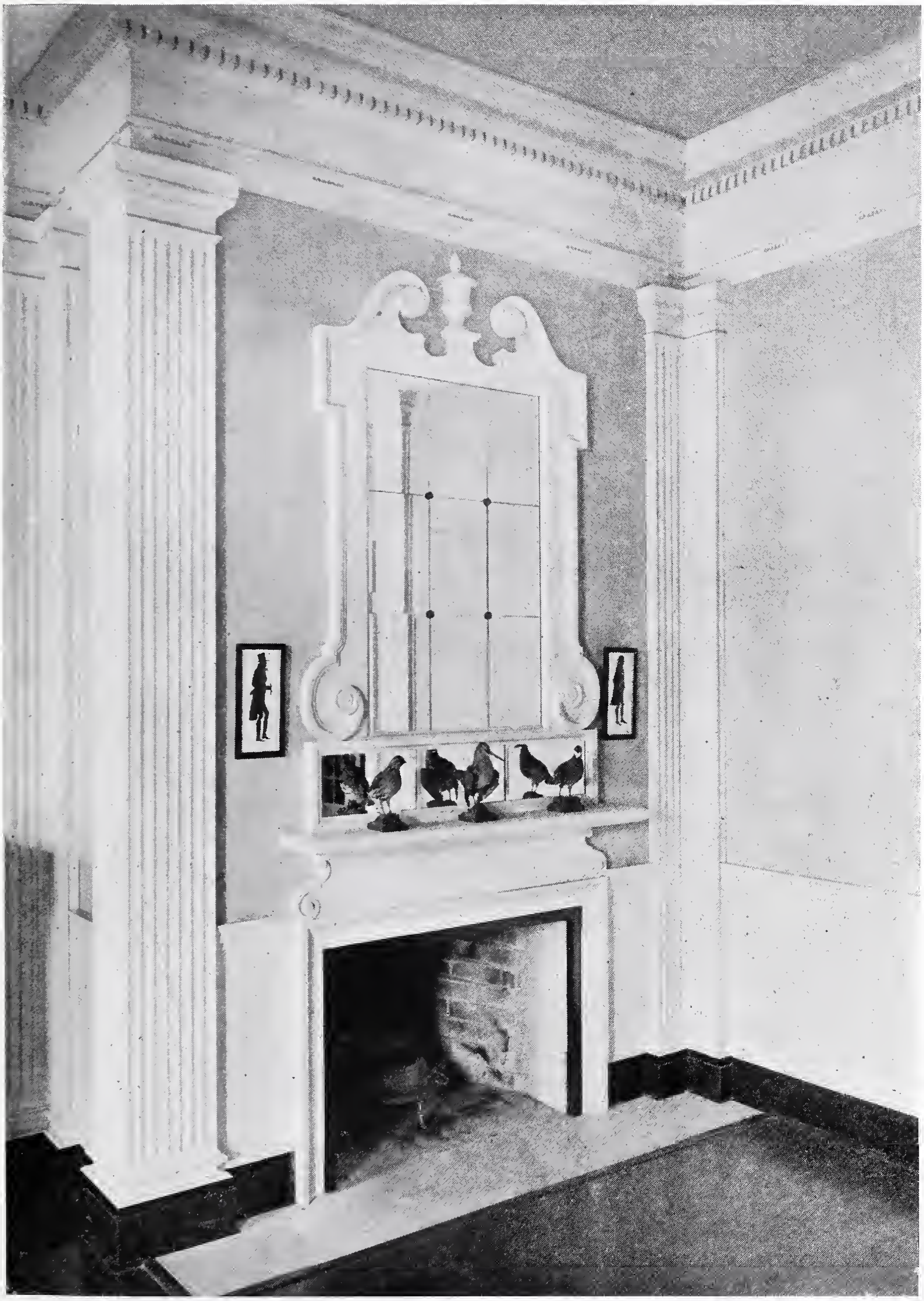
OVERDOOR PANEL IN DRAWING ROOM—RESIDENCE OF COL. JENNINGS C. WISE, RICHMOND, VA. WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT.



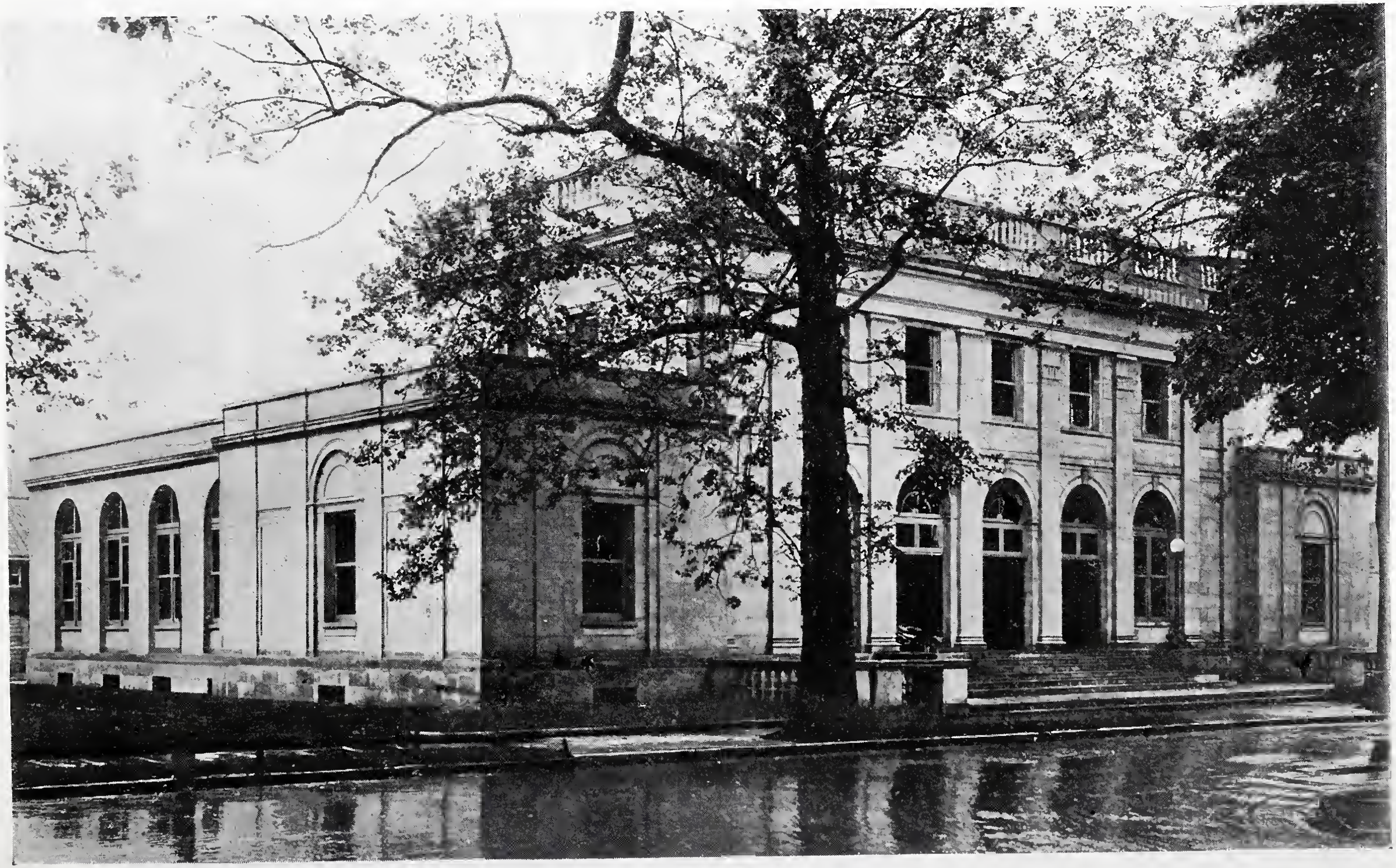
DRAWING ROOM—RESIDENCE OF COL. JENNINGS C. WISE, RICHMOND, VA. WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT.



LIBRARY—RESIDENCE OF COL. JENNINGS C. WISE, RICHMOND, VA. WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT.

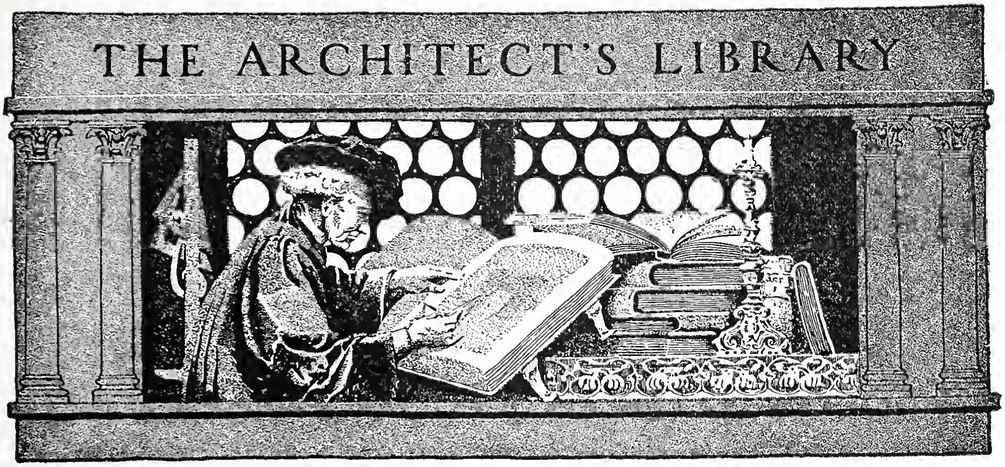


OVERMANTEL IN DINING ROOM—RESIDENCE
OF COL. JENNINGS C. WISE, RICHMOND, VA.
WILLIAM LAWRENCE BOTTOMLEY, ARCHITECT.



POST OFFICE, HACKENSACK, N. J. J. A. WETMORE, ACTING SUPERVISING ARCHITECT, TREASURY DEPARTMENT.

THE ARCHITECT'S LIBRARY



HISPANIC SOCIETY PUBLICATIONS

By MARRION WILCOX

GEORGE EDMUND STREET, who labored tirelessly and successfully to revive Gothic architecture in England, drew much of his inspiration from the great examples of that style which he studied in northern and central Spain. He was, we think, a man who held that adding a new feature or expression to the earth's countenance is a parlous matter, and that it is hardly possible for the products of two different architectural schools, the Gothic and the Renaissance, to harmonize equally well with the natural contours of the same landscapes. At any rate, his strong preference for the Gothic was asserted from the early days when, at Oxford, he knew William Morris and Burne-Jones (Morris afterward became one of his assistants) and throughout more than two-score years of triumphant work at London and elsewhere. If we wish to know the secret of his intellectual achievement, the answer given by a thoughtful biographer is at hand: "As the medieval builders reared and poised their great churches by a calculated balance of thrust and strain, and hung aloft in stone a proposition in proportion, so, you feel, with Street, it must have been some extraordinarily just measure, some perfect balance of temper, some secret of self-control, only comparable to the engineer's control of his crane or hammer or locomotive, that gave him life so abounding and yet so temperate, so huge in accomplishment and yet so undistressed."*

His great commissions were: for the Law Courts, for building the nave of Bristol cathedral, for rebuilding the cathedral at Dublin, and for restoring that of York. As Professor of Architecture to the Royal Academy, he delivered six lectures on Gothic Architecture in 1881. In the same year his death occurred, after a brief illness. All of his best work was done in the spirit and in the terms of that medieval work he understood so well; and in this connection we quote a passage from his own writing: "For that period of just five hundred years so regular was the development that it is not too much to say that a well-informed architect or antiquary ought always to be able to give, within ten, or at most twenty years, the date of any, however small a portion, of medieval architecture with almost absolute certainty of being correct when his judgment can be tested by documentary evidence."

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*George Edmund Street: Unpublished notes and reprinted papers; with an essay by Georgiana Goddard King. Frontispiece (in colors) and 12 illustrations; 430 pages; 5½ by 8½ inches; price $2.25. New York: The Hispanic Society of America and G. P. Putnam's Sons, 1916.

Spain's obligation to him, for the publication of his book on Gothic architecture in that country, receives appreciative recognition on page 47, where we read: "The effect of it [the work just mentioned] was to teach the rest of Europe that the glory of medieval Spain endured; that one could actually see something south of the Pyrenees, neither Saracenic nor Jesuit, a great religious art surviving, not decadent, not moribund nor morbid nor corrupted by the gold of the Indies, strong, virile, spontaneous, the expression of personal independence and manly piety." And on page 52 we read, without surprise, that he cared little for the architecture of the Renaissance: his temperamental, habitual preoccupation with the Middle Ages was too strong for that.

Moreover, his Gothic prepossession must not be regarded as exceptional in the field of the study and criticism of Spanish architecture. On the contrary, Street's practice conformed to the rule in this respect; and as time passed the fact became evident that we stood in need of a good new book on the Plateresque, simply because so few critics, either Spanish or foreign, had ever "ventured into the Renaissance century, the epoch of civil rather than ecclesiastical building activity."

It is a pleasure to say that such a book has finally been written and published in attractive form under the auspices of the Hispanic Society of America, postdating the work on George Edmund Street by about one year.* The special interest of its subject is well expressed in the following passages: "Spanish Renaissance or Plateresque, in its merely partial acceptance of the Italian and its adherence to earlier styles which it never hesitated to combine with the new, diverged farther from the established Renaissance type than did any architecture north of the Pyrenees. . . . It flourished principally in Castile. It is absolutely a distinct product from that picturesque, semi-Moorish stucco architecture of Andalusia which was carried to the Spanish colonies, later to be accepted as typical of the mother country. Andalusia has very little in common with the stern central and northern provinces where stone was used and monumentality was achieved. While not wishing to deny the charm of the stucco house nor its suitability to the Andalusian climate, one is forced to protest against its standing for the whole of Spanish architecture. Such widespread misapprehension simply means that the buildings of Castile, the very heart of the country, have been passed over for a type acknowledged by all Spaniards except Andalusians to be exotic. It is to increase the appreciation of what was done in Castile, to point out its charm . . . and to give the student some idea of what awaits him in Spain that this general view of the sixteenth century is written." The distinguished authors, Mr. and Mrs. Byne, remind the reader that the Renaissance came late to Spain and there drew its first architect from the ranks of practicing Gothicists. No record has been discovered of any Spaniard studying in Italy until a quarter of a century later.

Spanish efforts to build in the Italian style resulted in Plateresque modifications—the word *plateresco* implying a resemblance to the work of the silversmith, or *platero,* in scale and delicacy of execution. But it "does not mean that the Spanish architect followed the silversmith's lead in the use of Renaissance motifs; for the earliest church vessels—that is, important pieces such as custodias, chalices, or processional crosses in which such forms are to be found—are posterior to Egas's experiments. Nor were the first Spaniards who practiced Plateresque recruited from the goldsmith's shop as in Florence nearly a century before. They were Gothic architects and sculptors, who changed their style as opportunity presented itself, but who saw the new from the ornamentalist's point of view rather than the builder's." The earliest noteworthy example, the Hospital de Santa Cruz, Toledo, is eclectic in design, showing Renaissance and Gothic elements together with those which are known as *Mudéjar*—a term presently to be explained. "On the doorway and windows is concentrated a wealth of delicate ornament carved in marble. The contrast of this with the severe granite walls in which it is inserted is striking." In 1501 or 1502 a similar hospital was designed for the famous city and place of pilgrimage, Santiago de Compostela, named in honor of St. James (*Santiago*) the Greater. The architect of both hospitals was that Egas, already mentioned, whose experiments demonstrated the possibility of combining old with new, traditions of Spanish building with the new ornament, "and evolving therefrom something distinctive and racial." Egas's son-in-law and successor was Alonso de Covarrubias.

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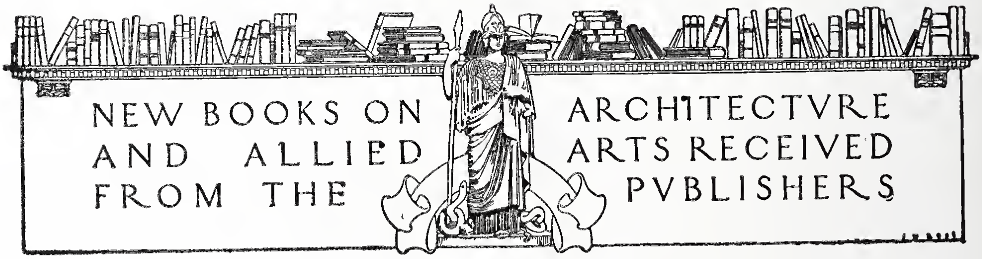
*Spanish Architecture of the Sixteenth Century; General View of the Plateresque and Herrera styles. By Arthur Byne and Mildred Stapley [Byne]. With 80 plates and 140 illustrations in the text, from drawings and photographs by Arthur Byne. New York and London, G. P. Putnam's Sons, 1917. (Half-title: Publications of the Hispanic Society of America, No. 109.) Price $7.50.

In regard to the ancient place which, with good reason, interests architects more than any other one place in the peninsula, our authors have this to say: "Toledo was a *Mudéjar* city. In it the Moorish type of civilization flourished long after the city had passed into Christian hands, and the fact is nowhere more evident than in its domestic buildings. The artizans were Asiatics—Moors and Jews; and not only the house, but nearly all the objects in it—furniture, fabrics, utensils—were of their making. Those un-European craftsmen were given a free hand and worked along unaffected by new styles that came from without, except when employed on Christian churches. What they produced for Christian masters is known in Spain as the Estilo Mudéjar. The latter word is derived from the Arab *Mudejalat,* meaning subdued, and was applied to those infidels, mainly Moors, who remained in any district after it had been conquered by the Christians. These industrious Mudéjares, with their superior skill in the arts and trades, found ready employment everywhere until the time came when economic considerations could no longer prevail against race hatred and religious bigotry. . . . The Mudéjar style may be roughly described as the combination of Moorish ornamentation with Christian plan and structure." It is quite true, however, that some of the building methods for roofs, floors and ceilings were, for centuries after the expulsion, largely or wholly Moorish; and the elasticity of the term Mudéjar becomes still more apparent when we reflect that its Christian element may be in the form of a Romanesque church like S. Tomé in Toledo, or such a medieval fortress as the castle of Coca, or again a Gothic-Plateresque palace such as the Infantado at Guadalajara.

Mr. and Mrs. Byne refer to the University of Salamanca as the most brilliant piece of Plateresque in Spain. Their descriptions of this and of the Casas Capitulares, Ayuntamiento or City Hall, of Seville (Diego de Riaño, Architect, 1527-1534) will be very well liked. Also in Seville, the Giralda tower, "a most skillful welding of Asiatic and European architecture," receives special attention. "In 1568, Ruiz, *maestro mayor* of the cathedral," we read, "was instructed by the chapter to design a Renaissance termination to the tower, and crowned it with an enormous bronze statue of Faith holding the banner of Constantine. This Faith (instead of being fixed and unchanging) is the *giraldillo,* or weather vane, which gives the whole tower its popular name, for the statue, though weighing a ton and a quarter, is so adjusted as to turn with the wind." Interesting and suggestive is Chapter VIII, on the Sevillian house, the patterned plaster called *yesería,* enameled tiles called azulejo, etc. It is but right to direct attention also to the chapters on Granada and the work of the architect Diego de Siloe, who founded there a distinct Granadine school; to the pages devoted to old palaces in Palma de Mallorca; and finally to the characterization of the Escorial (Juan Bautista de Toledo and Juan de Herrera, architects; structure completed in twenty years). The Escoriol, our authors say, "as a majestic and awe-inspiring scheme comes nearer to the grandeur of antiquity than anything erected in Italy during the Renaissance." But they add that "its severity, its pessimism, its determination to conquer by sheer weight of mass, its utter absence [? lack] of esthetic appeal, would have been inconceivable to an Italian or a Frenchman." Surely, then, not a *Plateresque* monster.

The two books thus briefly reviewed—and yet sincerely commended—supply a most convenient literary path of approach to full comprehension of the Spanish phases of the Gothic and the Renaissance. Beside that, they bring out clearly the contrasts, the occasional blendings, of Gothic and Renaissance in general. It would be well to read them, we think, in connection with Street's authoritative work entitled *Some Account of Gothic Architecture in Spain.*



NEW BOOKS ON ARCHITECTVRE AND ALLIED ARTS RECEIVED FROM THE PVBLISHERS

The Natural Style in Landscape Gardening: A Clear-Cut Workable Outline of the Technique of Design. By Frank A. Waugh. 16 pages of ills., 145 p., 6 by 9½ inches. Boston: Richard G. Badger. Toronto: The Copp Clark Co., Ltd. Price $2.50 net.

Outdoor Theaters. A Treatise on the Design and Use of Garden Theaters and Outdoor Auditorium. By Frank A. Waugh. 16 pages of ills., 145 p., 6 by 9½ inches. Boston: Richard G. Badger. Toronto: The Copp Clark Co., Ltd. Price $2.50 net.

Report of the Commission of Fine Arts for the fiscal year ended June 30, 1916. Many ills., 83 p., 11 by 8 inches. Washington: Government Printing Office.

Annual Report of the Board of Regents of the Smithsonian Institution for the year ended June 30, 1916. Many ills., 597 p., 9 by 6 inches. Washington: Government Printing Office.

Smithsonian Institution, Bureau of American Ethnology, Bulletin 63. Analytical and critical bibliography of the Tribes of Tierra del Fuego and adjacent territory. By John M. Cooper. 1 map, 228 p., 9¼ by 6 inches. Washington: Government Printing Office.

Our Community. Good Citizenship in Towns and Cities. By Samuel H. Ziegler, A. M., and Helen Jazuette, A. B. Many ills., 240 p., 7½ by 5 inches. Philadelphia: The John C. Winston Co.

The Language of Color. By M. Luckiesh. 282 p., 7¾ by 5¼ inches. New York: Dodd, Mead & Co. Price $1.50 net

A History of Architecture. By Fiske Kimball, M. Arch., Ph. D., and G. H. Edgell, Ph. D. 603 p., many ills. 8 by 5½ inches. New York: Harper & Brothers.

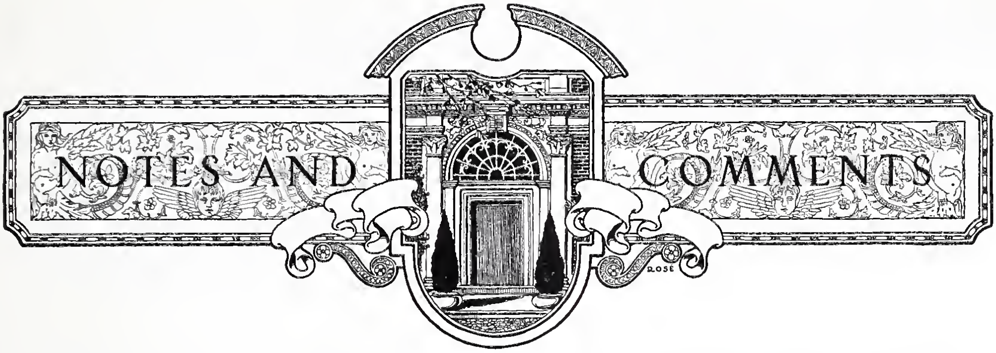
Fire Prevention and Protection. By A. G. Huston. Third edition. Completely revised. 125 figs., 11 plates, 757 p., 7 by 4½ inches. New York: The Spectator Company.

Furniture of the Olden Time. By Frances Clary Morse. 470 p., many ills. 8½ by 6 inches. New York: The MacMillan Company. Price $6.00.

Handbook for Architects and Builders. Vol. XX, 1917. 448 p. 9¼ by 6¼ inches. Chicago: Illinois Society of Architects.

Catalogue of Mrs. Phoebe A. Hearst's Loan Collection of Oriental Rugs and Textiles, Prints, Tapestries and Paintings, Persian Manuscripts, Phoenician and European Glass, Furniture and Objets d'Art in the Palace of Fine Arts, San Francisco. Edited by J. Nilsen Laurvik, Director. 253 pp., 2 color plates, 1 map, 75 half tone ills. 5 by 7¼ inches. San Francisco: The Palace of Fine Arts. Price $1.00.

Over the Drawing Board. A Draftsmen's Handbook. By Ben J. Lubschez, F. A. I. A. Many ills., 131 p., 7½ by 5 inches. Washington: The Journal of the American Institute of Architects. Price $2.00 postpaid.



NOTES AND COMMENTS

Leonardo, an Architectual Theorist.

As a general thing, the conception brought to mind by the professional title of architect implies not only the planning and design, but also the supervision of the execution of a structural problem. However, great designers, though chiefly known by their handiwork in one of the major arts, have occasionally been endowed with an accurate grasp and understanding, not to mention a keen appreciation, of the technical requirements and esthetic guiding principles characteristic of another medium, or even of several other media, what though as widely separated in material and treatment as are painting and architecture. Add to this possibility the fertile potentiality fostered by the phenomenal versatility which so frequently characterized the master minds of the Renaissance, and we have rich ground for an excellent parallel growth of two or more arts out of one intellect, and a fitting background for the activities of that genius of refined intellectuality and perfection of technique, Leonardo da Vinci, a practical painter and sculptor and engineer, even a musician, but in architecture chiefly a professional theorist. In his recent analytical biography of this consummate master, Professor Osvald Sirén, of the University of Stockholm, has given us some interesting sidelights upon this phase of Leonardo's prolific mind. From architectural studies overlooked by Vasari and other early writers, no doubt because they quite generally led to no practical results, we can now reconstruct in part at least da Vinci's abstract pleasure in the problems of what may be called pure architecture, a pleasure which amounted to an avocation or even to a hobby, and finding its outlet in design on paper only, the accomplishment of which seems to have given the artist a satisfaction now so often seen in parallel among modern practitioners who delight in "projets" and false perspectives and the skillful "blague" of rendering, to the utter exclusion of the constructional facts to which the problem on paper is the very flimsy preamble. Fortunately da Vinci's ability as an engineer forced into his purely theoretic architectural problems a certain fact and reality, tying them to earth, as it were, and to the actualities of humble materials and human occupancy.

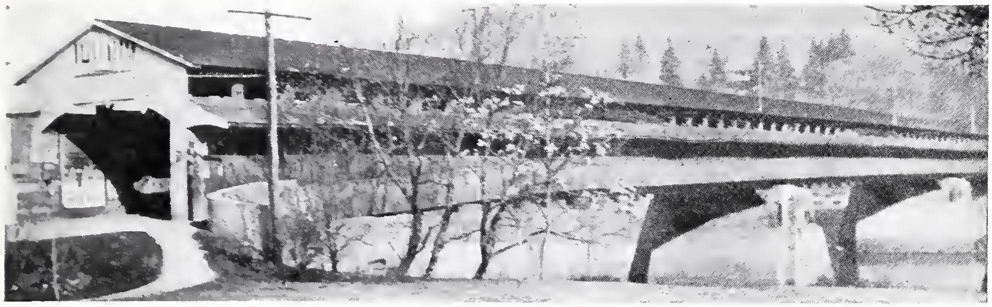
Prompted, no doubt, by the same impulse which made for the subsequent type of mural painting delighting in the semblance of perforated walls, ceiling views giving upon an open sky overhead, balustrades with urchins dangling their legs and smiling down upon the spectator, colonnades seen in terrific foreshortening from directly beneath, and a dozen and one other vagaries of a wayward but forceful brush, Leonardo frequently assigned himself a task of egregious difficulty for no other purpose than to test his own ability at solving it. Again, he found great satisfaction in achieving the ideal solution for a given set of circumstances. For instance, his work at the Porta Giovia had for its chief motive the artist's hope that he could there develop his theories on fortification. Again, when he made a model for the cupola of the cathedral of Milan, the theoretical conditions of the task chiefly engrossed his mind. We are driven to conjecture the great value of a mind of this type and strength when the original problem of building Brunelleschi's dome at Florence was brought to the fore. In da Vinci the founder of the Italian Renaissance would have had an able competitor for the honor of solving this gigantic problem in domical vaulting, and thus beginning the long series of domed Italian churches of the Renaissance.

Leonardo's architectural interest was fostered above all by his close friendship for Bramante, whose connection with the cathedral and other building projects at Milan is well known. No doubt these two great minds collaborated on more than one of the buildings now attributed to one or the other individually. Assuredly their minds were cast in much the same mold and their mode of approach in most cases shows a similarity. We know especially that they both devoted their attention primarily to church edifices of the so-called central type, which for Bramante always seemed the perfect solution of the problem of a domed central interior raised over a plan of polygonal or circular form. Leonardo devotes himself also to solutions of this problem of the domed central structure, called by Burckhardt the last in the series of "absolute types" of architecture. Leonardo's inventive mind reveals itself in every manner of combination of circular or polygonal plans for domed churches, or indeed, for monumental structures as well. Thus almost all his sketches show the central cupola, usually with smaller domes over side chapels or other motives. Frequently the simple Greek cross plan is found, usually with apse terminations. We note primarily the resourcefulness of da Vinci's mind, his direct creative method, and the ease with which his imagination is guided into purely architectonic channels. In fact, we have Leonardo's own word for it that he had intended to produce a treatise on dome building and design, and we are safe in assuming that the sketches he has left us are in part suggestions for illustrations to accompany his discussion.

In addition to the domical church problem, da Vinci also favored highly specialized problems, as, for instance, that of the ideal solution for a "preaching room" or teatro di predicare, in which we note the inspiration from ancient amphitheatres with a speaker's pulpit in the centre. A most remarkable idea is that of a great hall externally cone-shaped and internally barrel-shaped, with a speaker's position on top of a column in the middle, and the seats of the audience disposed in diminishing circles in both upper and lower parts of the hall, thus placing all hearers at about equal distances from the speaker. We have also the drawing of an enormous oriental sepulchre or mausoleum, again cone-shaped, and with a temple set upon its truncated top. A terrace in the middle gives access to a vast labyrinth of sepulchral chambers within. However fanciful these problems may have been, they were undoubtedly suggested by current problems in the hands of other great architects among his contemporaries. He approaches them all with a largeness of vision, with an understanding of architectural scale and proportion, that is quite comparable with his supreme mastery in the pictorial art.

Leonardo has left us also a most fascinating scheme for replanning the city of Milan. After the plague of 1485 and 1486 he addressed to the Duke, his patron, a letter describing a new type of thoroughly hygienic metropolis, so that his fellow citizens might no longer be required to live "packed together like goats and pollute the air for one another." The plan involved the construction of ten smaller cities, each containing five thousand houses with an average accommodation for 30,000 inhabitants. A system of artificial rivers or canals, with lock connections and regulation, was to provide circulation facilities and a means of carrying off sewage. A maximum of light, air and cleanliness was accounted for in the plan; streets within the ten cities were as wide as buildings bordering them were tall; great squares and market spaces were also included. Streets were, furthermore, arranged in two levels, the upper for pedestrians, the lower for traffic; the latter were also accessible from the canals, thus providing ready means for cleaning them and also for transportation of goods. A still lower level was occupied by a complex system of smaller canals to be used by gondolas. This level and the traffic level both had access to all houses for purposes of easy delivery of goods. To be sure, this huge project was at that time far beyond human means and exchequer to finance, though we do not doubt that da Vinci could readily have brought it physically into being. To day such enormous undertakings are everywhere in progress; many even of much larger scale are a matter of common practice. There is much in this Utopian plan of Leonardo's that will merit investigation, and for modern methods and materials it would not be of exaggerated magnitude.

RICHARD F. BACH.



OLD COVERED BRIDGE AT LOCK HAVEN, PA.

An Old Covered Bridge.

Among the many evidences which we have of pioneer industry in our Eastern states not least in interest are the old covered wooden bridges. Owing to floods, fires, county commissioners and other agencies of destruction, they are yearly becoming less numerous, and it may not be long before these picturesque old structures will be but a memory and the highly efficient and ugly steel spider will have come into its own.

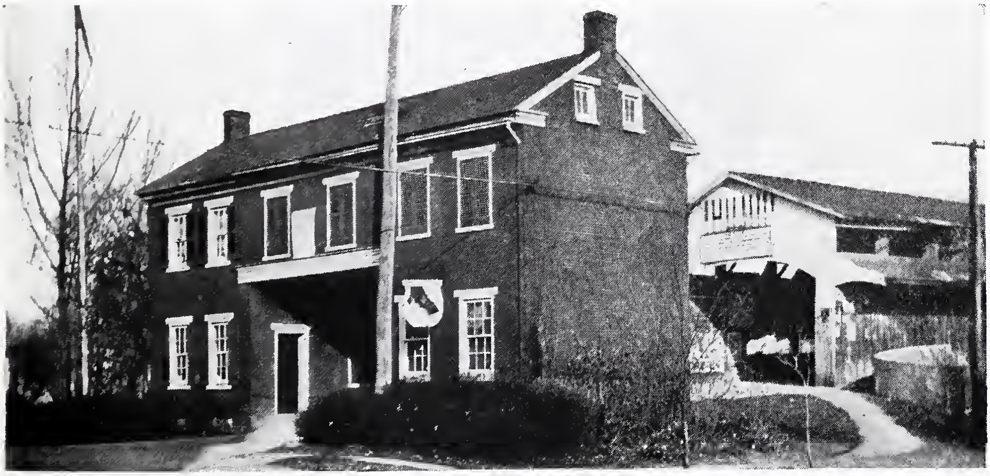
With the substitution of the automobile for nervous horseflesh, the desirability of enclosing a bridge, in order to shut off the terrifying view of rushing waters, has largely ceased to exist, and the open trusswork of steel, with its decreased wind pressure, fire risk and flood danger, offers a more efficient, though certainly a less picturesque substitute for the closed wooden structure.

There is one of these old covered bridges spanning the Susquehanna River at Lock Haven, Pennsylvania, which was built in 1852 and is of unusual interest, not only because of its great length (over eight hundred feet), but also because of the two-story tollhouse which spans the roadway where it leads up to the south approach of the bridge. A covered walk for pedestrians built out on one side of the bridge adds an interesting touch of irregularity to the structure and, as may be readily judged from the photographs, it forms a picturesque feature of a beautiful valley.

It is unfortunate that the American people do not possess a more intelligent appreciation of the historic and esthetic value of such interesting reminders of the past, for crude though such a structure may be, it nevertheless represents the craftsmanship of its time. Even so interesting an old building as this tollhouse has escaped the spoiler's hand only because of the protests of a Women's Civic Club.

Regrettable as the popular lack of appreciation for old heirlooms may be, there are hopeful indications of a tendency toward greater appreciation of their value.

I. T. Frary.



OLD TOLLHOUSE AT LOCK HAVEN, PA.

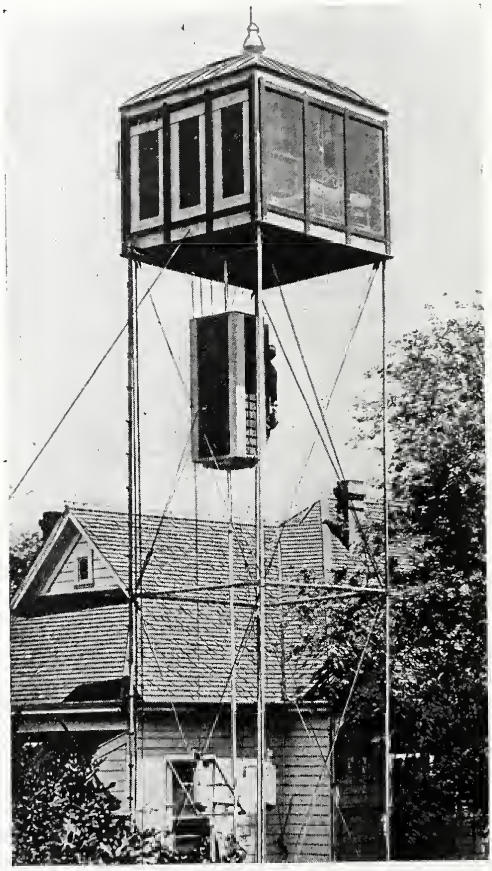
A Sleeping Chamber on a Tower.

After suffering from insomnia for several years, especially during the hot spring and summer nights, Mr. L. Gregory, of Winters, California, decided that he would imitate the birds and sleep high. A bungalow in a tree was his first idea; but as there were no trees in his yard large enough to hold such a structure, he decided to build a steel tower with a screened bedroom at the top. The result is a sleeping porch on a forty-foot tower, which not only gives the occupant of the room the benefit of every breeze that blows, but also eliminates the ground vapors that ascend from the earth on damp evenings. In addition, the room makes a fine reading plac during the day, besides affording an excellent view of the surrounding country.

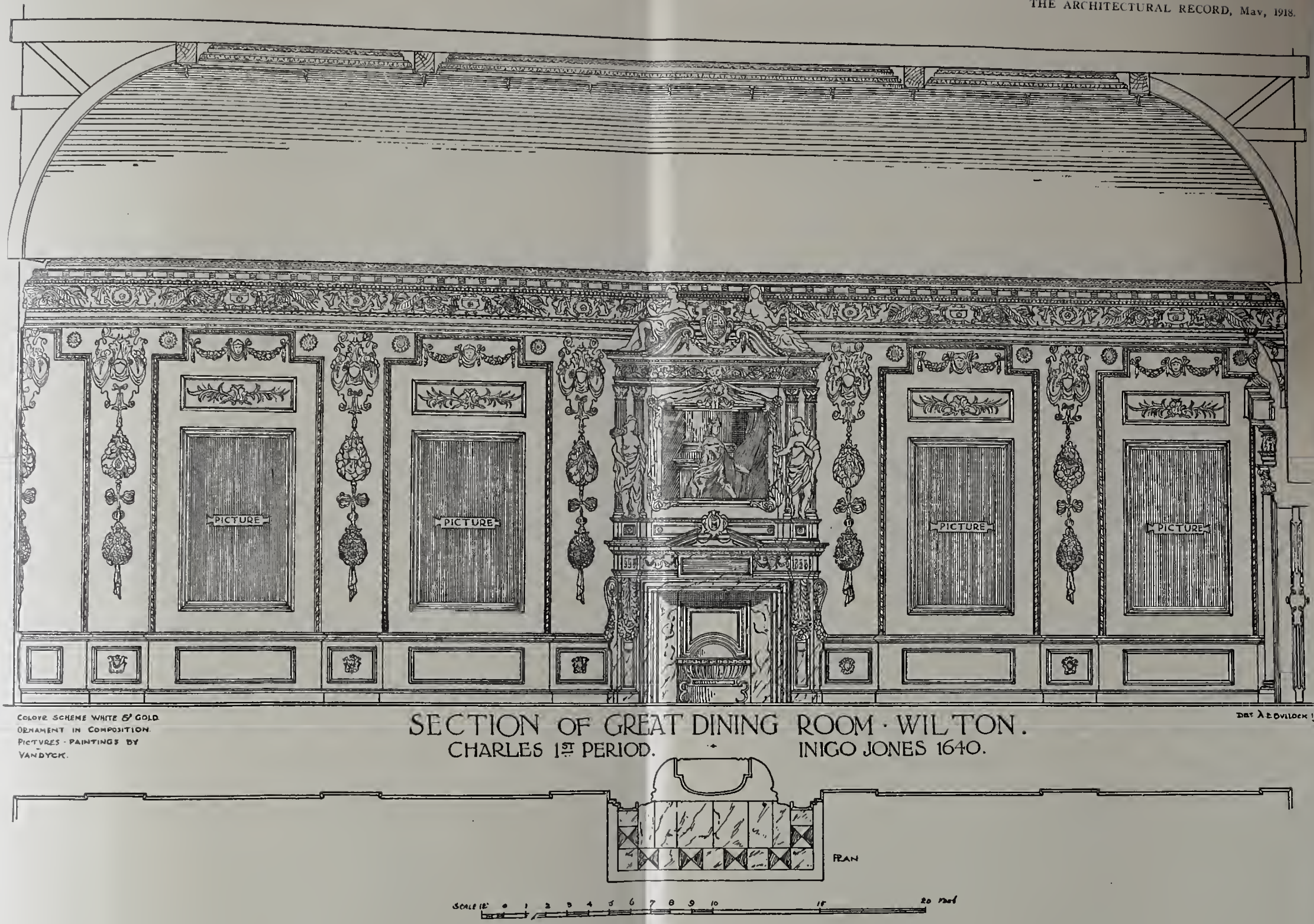
The bedroom is about ten feet square and contains a single bed and a couple of chairs. Access to it is gained by means of a small electrically operated elevator, which enters through a trap door in the floor of the chamber. The trap door prevents the entrance of flies and mosquitoes when the elevator is at the ground.

After continued experiment Mr. Gregory found that the temperature averages ten degrees cooler at the top of the tower than down on the ground.

ROBERT H. MOULTON.



SLEEPING CHAMBER ON A TOWER, SHOWING ELEVATOR HALF-WAY UP.



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SECTION OF GREAT DINING ROOM · WILTON.
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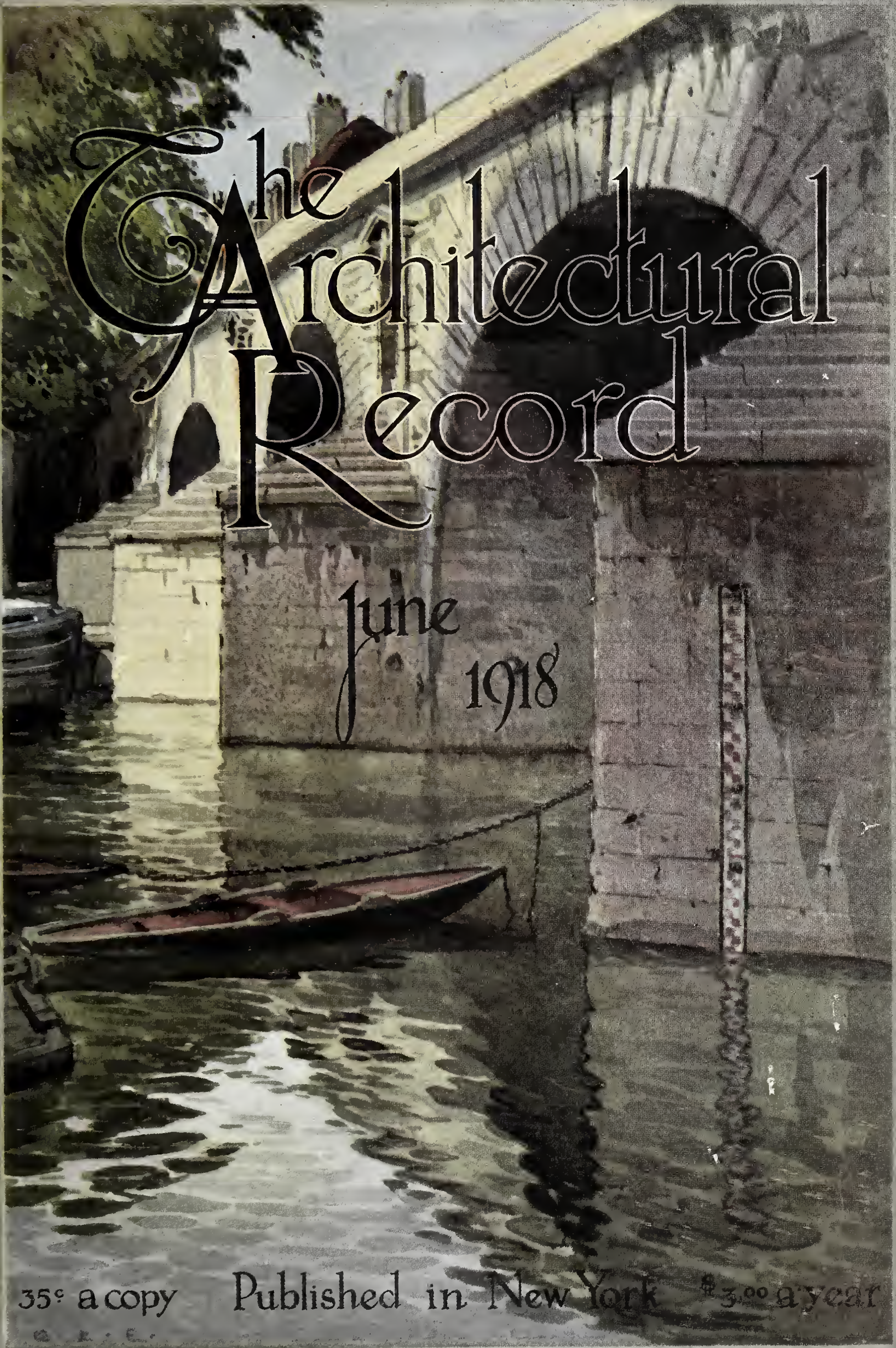
SUPPLEMENT TO ALBERT E. BULLOCK'S ARTICLE ON "ENGLISH ARCHITECTURAL DECORATION," PAGE 427.



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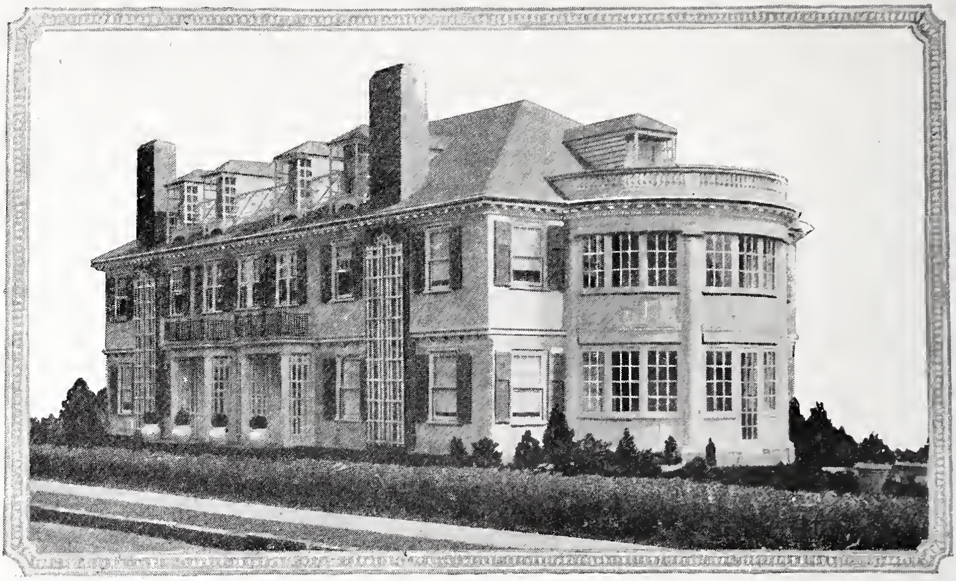

Bishopric Board Makes Stucco Finish Popular

When a scientifically constructed background for Stucco was discovered—a background that would **clinch** the stucco so it **couldn't** crack or flake off—then the stucco home led in public favor.

Bishopric Board was "discovered" six or eight years ago and Bishopric Board was the background used in the home of Mr. P. N. Leone at Hartford, Conn., illustrated above, and recommended by Architect R. F. Barker.

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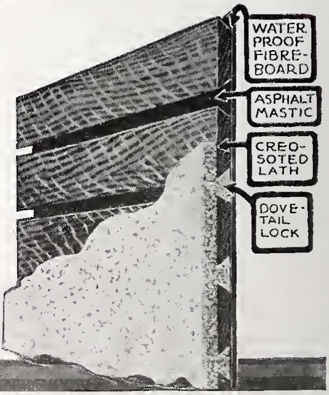

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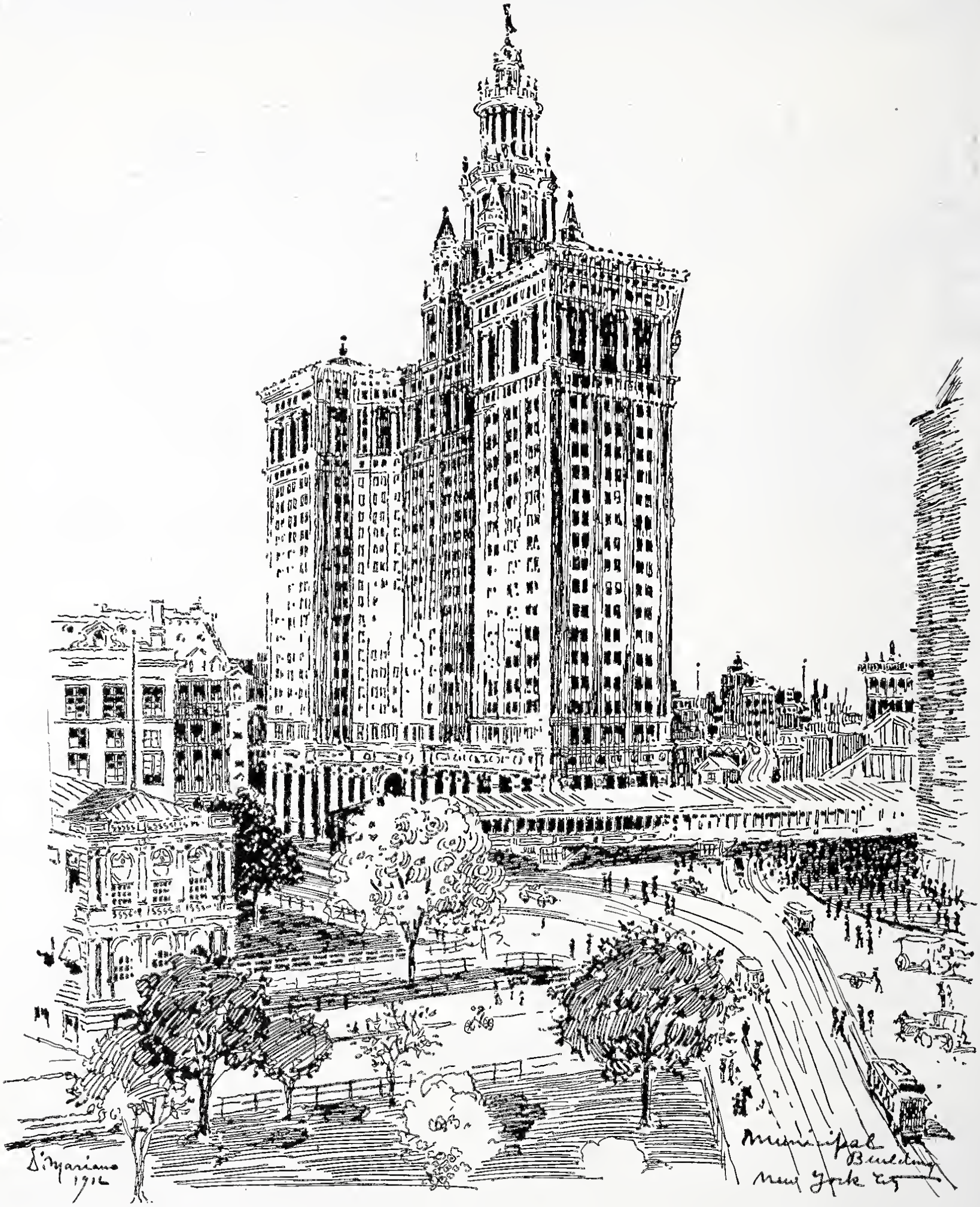
DiMariano 1912
Municipal Building New York City

DRAWING BY JOHN DI MARIANO.

THE
ARCHITECTVRAL
RECORD

VOLVME XLIII

NVMBER VI

JVNE, 1918

The Sixtieth Street Branch of the Guaranty Trust Company of New York

Cross & Cross, Architects

By Charles Over Cornelius

IN the evolution of local types of buildings geographical conditions have always been one of the controlling factors. This relation between architectural expression and geographical influence may be observed throughout the development of the art of architecture and has been repeatedly emphasized by historians of the subject. Nowhere is this influence more striking than in the character of building in the city of New York, where the scant breadth of the island has forced upon business, great and small, that continuously uptown movement so noticeable in the last few decades. The impossibility of lateral expansion has resulted in the rise of great buildings which soar to heights undreamed of in past ages; while many firms, finding themselves cramped beyond endurance in their original quarters, have of necessity moved in the one direction where expansion was yet possible—namely, uptown.

The invasion by business of sections long held sacred to the home has caused much trepidation, which has found expression notably in the zoning ordinance of 1916. The zoning ordinance, however, leaves certain marginal areas which are at present residential in character, but in which business buildings are permitted. In such areas it is desirable that the new commercial buildings shall disturb the residential atmosphere as little as possible. Fortunately, not a few business houses are in sympathy with this ideal, which conforms to the modern conception of the relationship of business to the community; today many business organizations regard themselves as servants of the public and so

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direct their service as to render it of the greatest benefit to the greatest number.

Exemplifying both of the above tendencies, which may well be termed characteristic of twentieth century New York, is the small banking house lately completed at Sixtieth street and Madison avenue, from the designs of Cross and Cross, for the Guaranty Trust Company of New York.

Here we find a business building standing on a commercial thoroughfare in the heart of a great residential district, not stark and gaunt like a stranger in a strange land, but adapting itself in size to its surroundings, while at the same time sustaining to a remarkable degree the dignity of its use. Built primarily as a branch of a large organization, its purpose is to serve those whose daily life lies close about it; and its location, readily accessible to its clients and within easy reach of the main shopping district of the city, is a merit in itself.

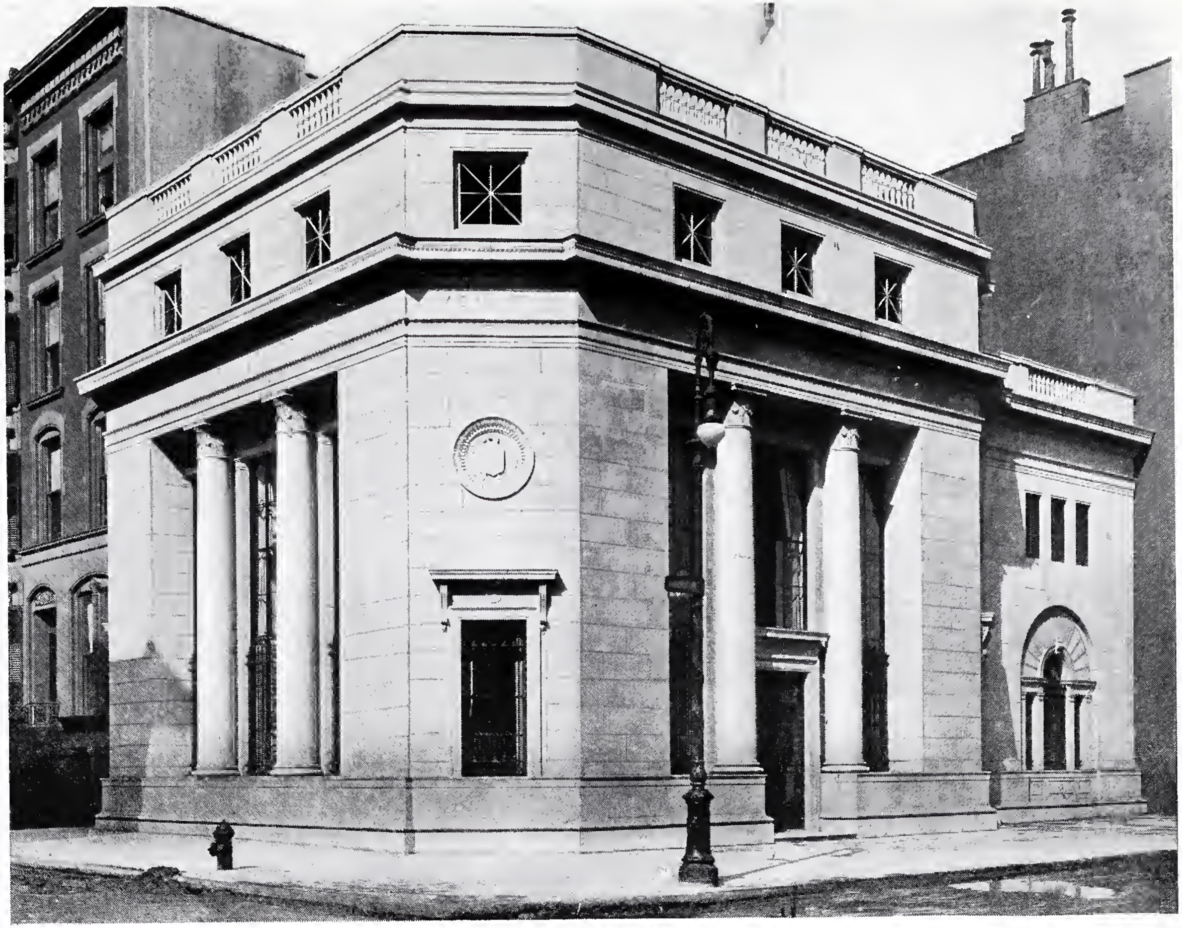
A nice discrimination is shown in the choice of the Adam style, which with modifications has been used. The Brothers Adam were in their greatest vogue during that period of the eighteenth century when our relations with our mother country were strained to the breaking-point. As a consequence, we find among their American contemporaries but little work in architecture and furniture strongly tinged with their very refined and sophisticated influence. At the time of Robert Adam's return to England from his continental tour and his almost immediate elevation to the leading position among the architects of the day, the currents tending toward the Revolution in America had set in strongly, resulting in a constant decrease in the importation of European ideas in the arts and an almost complete suspension of such importation for a time covering the last quarter of the century. When friendly relations were finally resumed, the Adam mode had given place to its successor, and thus its use finds here in America a certain freshness which is lacking in many another style of European origin.

Although in the present object of our attention this definite style has been adopted and quite consistently carried out in detail and motif both in the interior and exterior elevations, in the plan the Adam arrangement of spaces has in no sense been followed. Here we find a very definite division into two distinct units: the great square banking room on the corner, with high windows facing south and east, and a smaller ell which contains the luxurious and inviting department for the ladies, who will form a major part of the clientele. On the exterior these two units are very marked—the banking room dominating in both its scale and dimensions, the ell contrasting by its more intimate scale and informal motif.

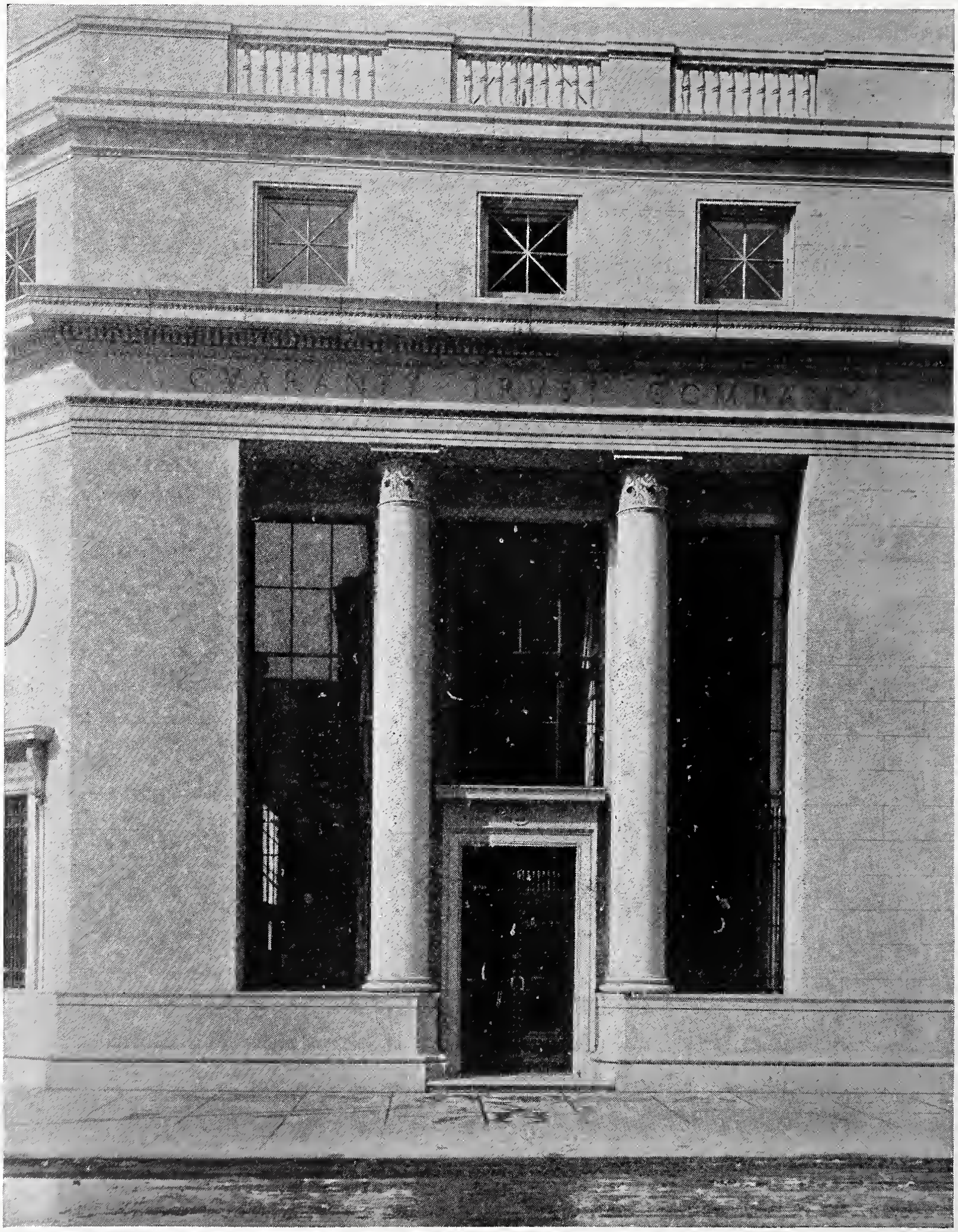
In connection with recent experiments in obtaining laws for proportion from geometrical formulae, it is interesting to note the part which the square plays in the composition. This figure forms the basis for the plan of the great room and is repeated in the general mass of the main façade as well as in both the large and the small window openings.

The exterior is a most successful bit of stonework in a soft-toned Tennessee marble. The carving and moldings are restrained in design, yet crisp and beautiful in execution. There is a certain almost Greek quality about the doorway, albeit without the naiveté of an Attic piece. By cutting off the corners of the main building, the necessity of four additional windows on each façade—two in the attic and two in the lower story—has been eliminated and at the same time the importance of the dominating main room is emphasized. The wrought iron grilles of the windows have the soft brown color given by the "boiled in oil" protective finish. Large silver medallions simulating coins relieve the severity of the vertical bars, which flower into a delicate cresting in the arched window of the ladies' room.

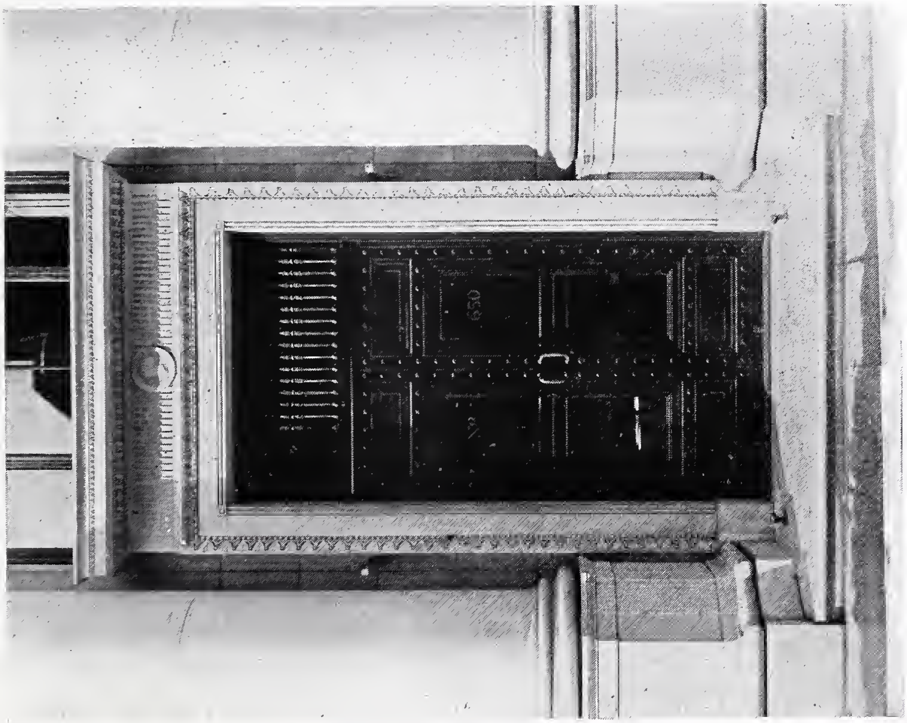
The entrance from Madison avenue leads directly into the main banking room, which is given a cruciform shape by the reserving of the corner spaces. The barrier separating the public from the banking space forms in plan a stilted semicircle, which springs from the corners at right and left of the door. Behind the barrier, directly opposite the en-



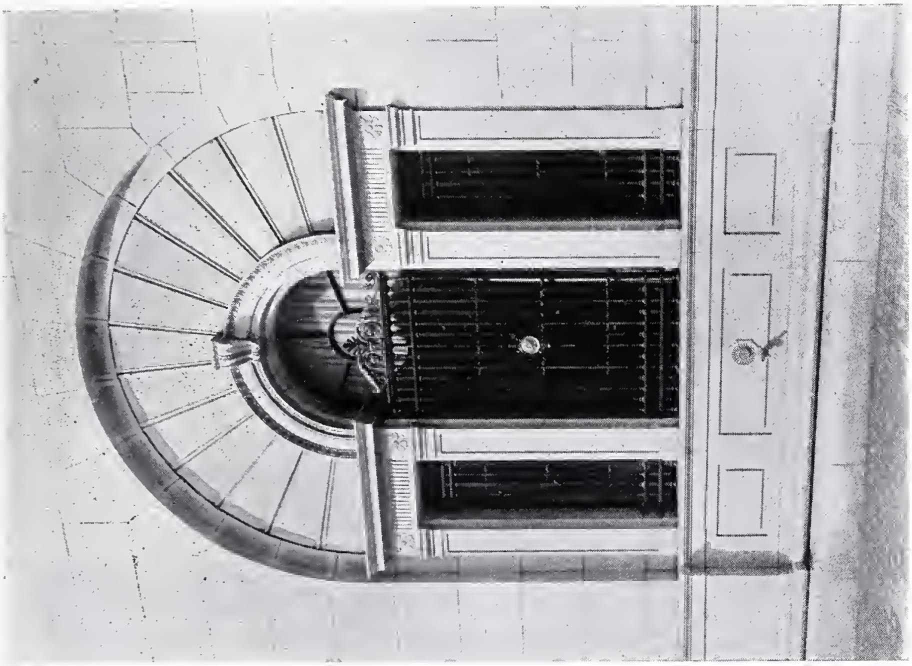
SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK. CROSS & CROSS, ARCHITECTS.



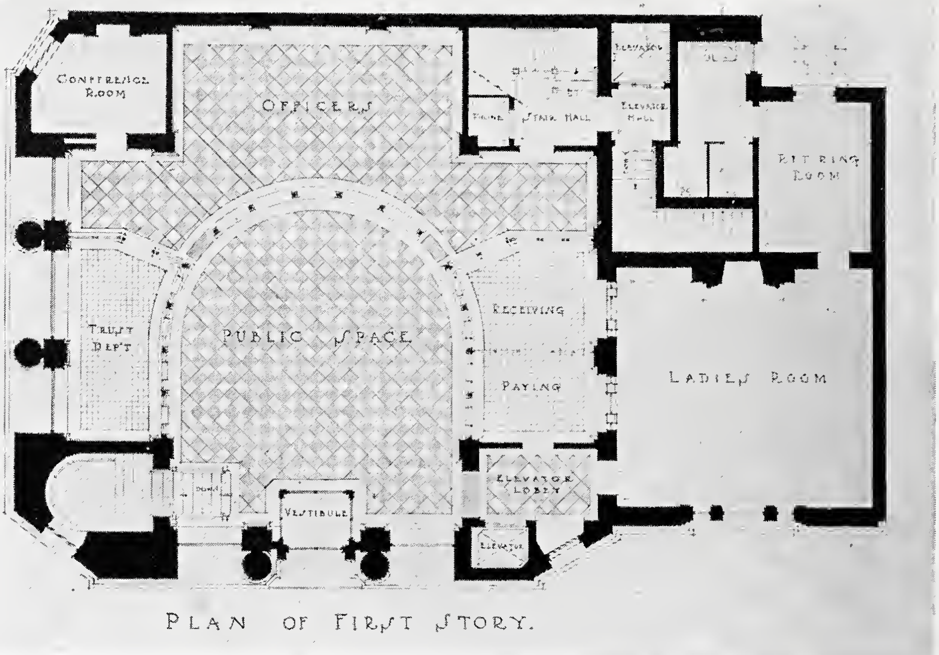
MADISON AVENUE ELEVATION, MAIN BANKING ROOM—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK. CROSS & CROSS, ARCHITECTS.



MAIN ENTRANCE DETAIL—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK.



WINDOW DETAIL—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK.



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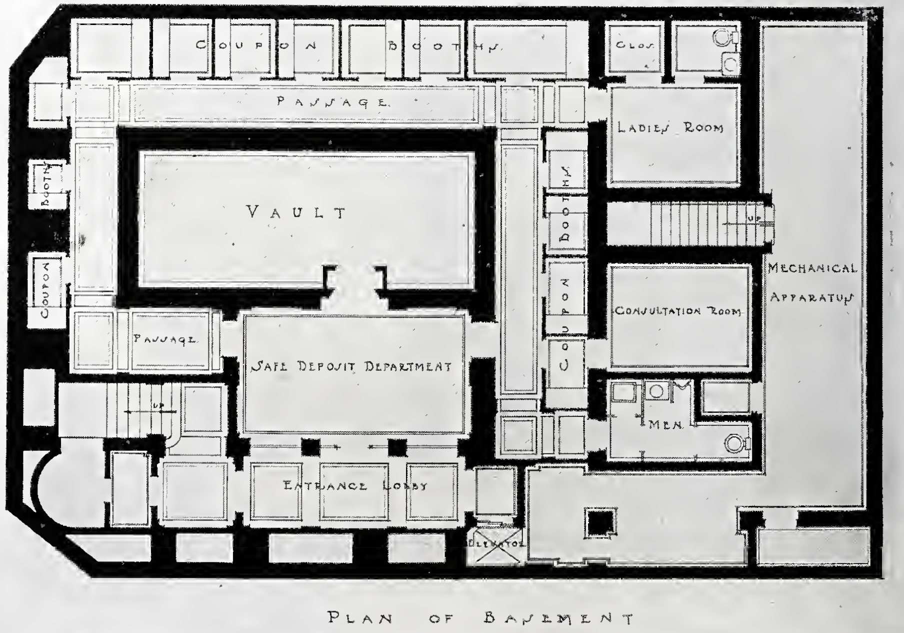
Cross & Cross, Architects.



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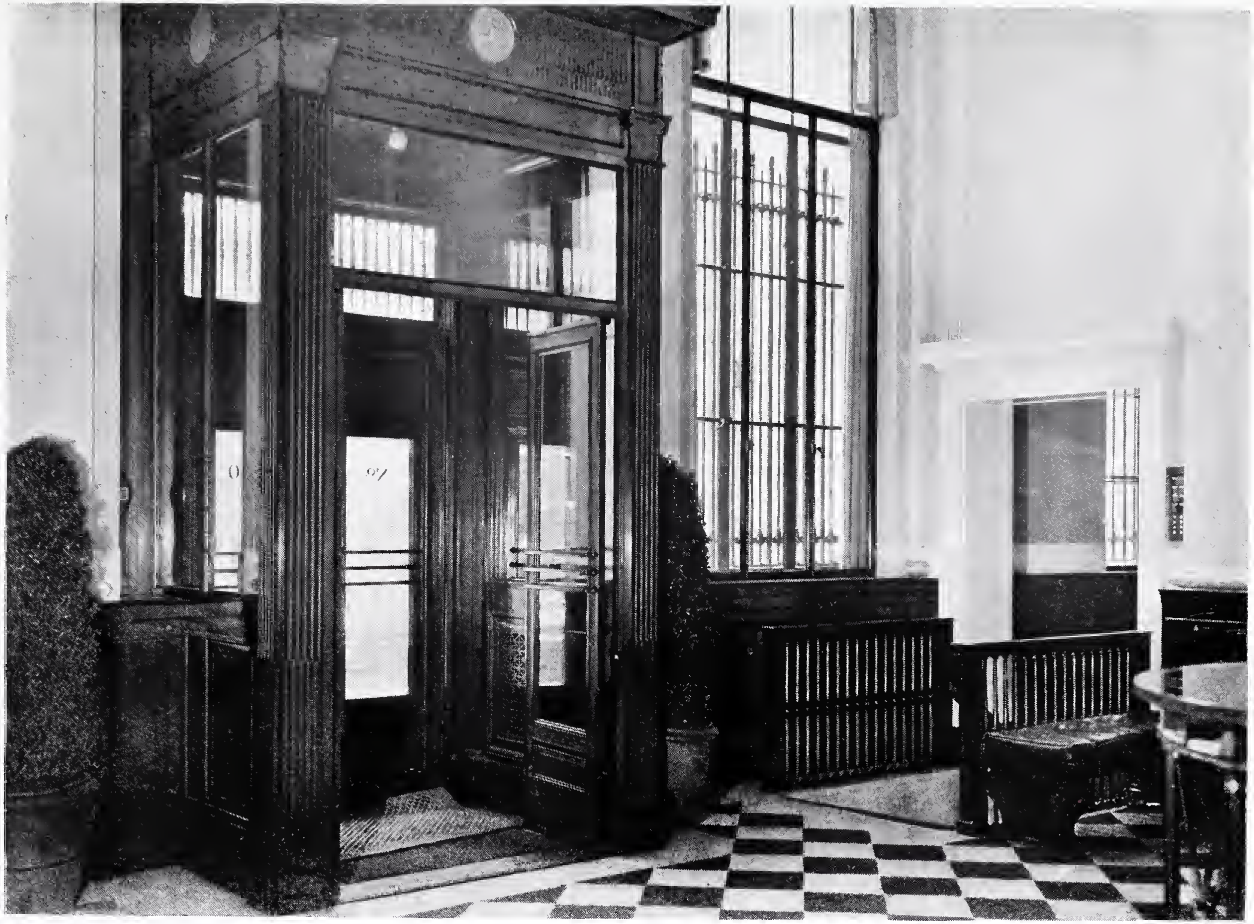
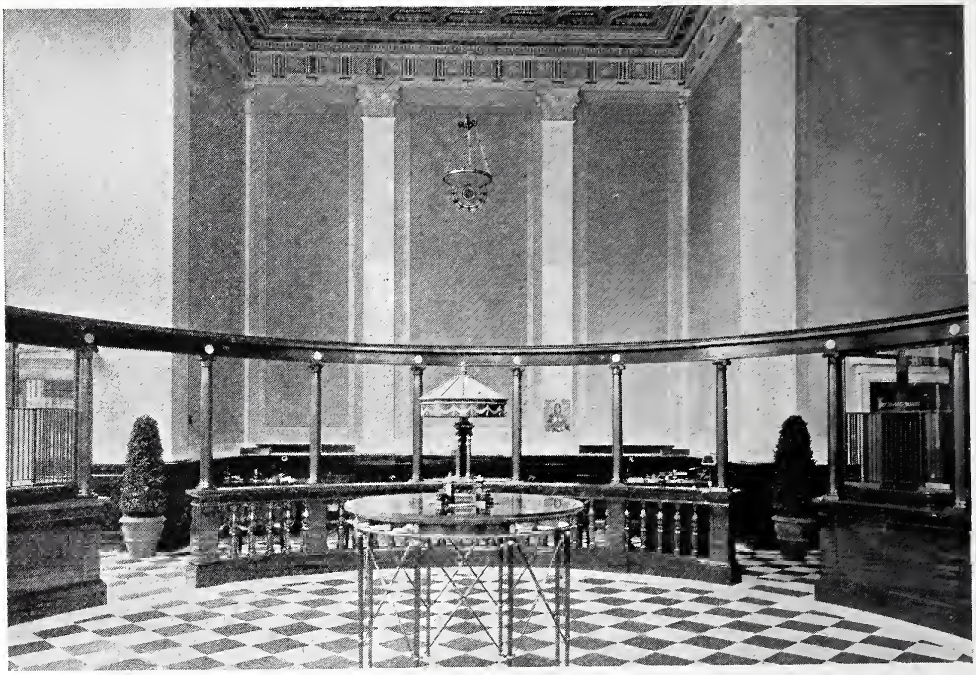


ENTRANCE VESTIBULE, SHOWING STAIRWAY TO SAFE DEPOSIT DEPARTMENT—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK. CROSS & CROSS, ARCHITECTS.



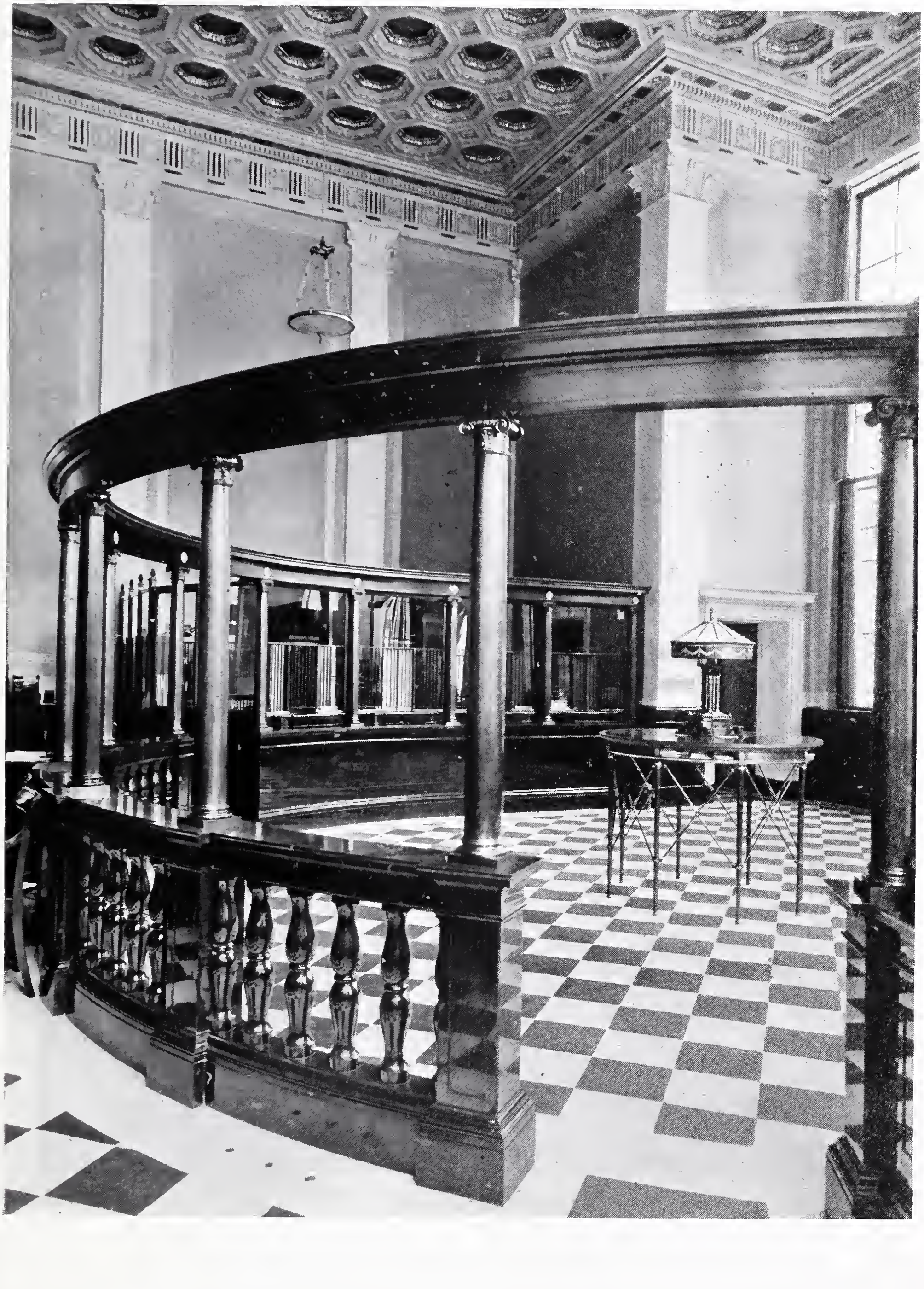
VIEW OF MAIN BANKING ROOM FROM ENTRANCE—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK.
Cross & Cross, Architects.

trance, are the desks of the officials of the branch; to the right the banking windows of paying and receiving tellers, and to the left those of the trust department.

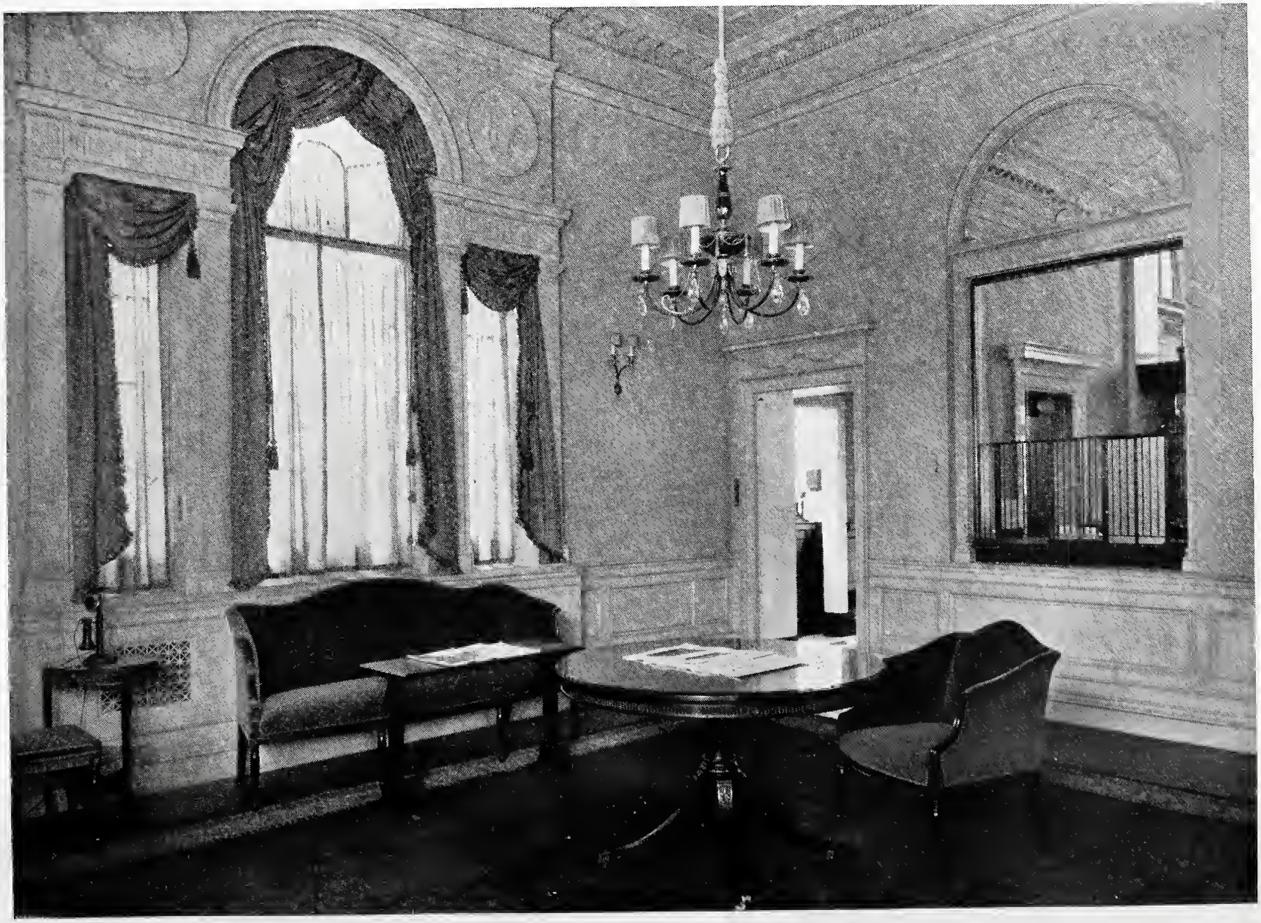
The spaces reserved in the corners have been cleverly utilized. The one to the left of the entrance contains the stairway leading down to the safety deposit vault; while that at the right forms an entrance lobby to the ladies' banking room, which is served by its own elevator to the safe deposit department. At the left, in the rear, is a conference room, and at the right are the service stairs and an elevator.

The coloring, or rather absence of coloring, in this lofty room is a matter of congratulation. The material chosen for the grilles, the desks and the entrance vestibule is a highly finished gun-metal, decorated with silver copies of Greek coins in the case of the Ionic colonnade of the barrier, with typical Adam ornament in the case of the central circular desk. The base of the barrier is of a highly polished black, onyx-like marble, which harmonizes remarkably with the gun-metal above. The floor tiles are alternating squares of black and white marble. The wall space is divided by flat white marble pilasters, whose chaste capitals support an elaborate entablature below the coffered ceiling; while the panels between are painted a creamy gray, approaching a putty-color, whose warm and restful tone is relieved by the metallic Greek fret which forms the border. This same color is repeated in the ceiling, although in different tones, and the decoration in each octagonal coffer is picked out in silver. Simple crystal bowls, mounted in black and silver, serve for lighting fixtures.

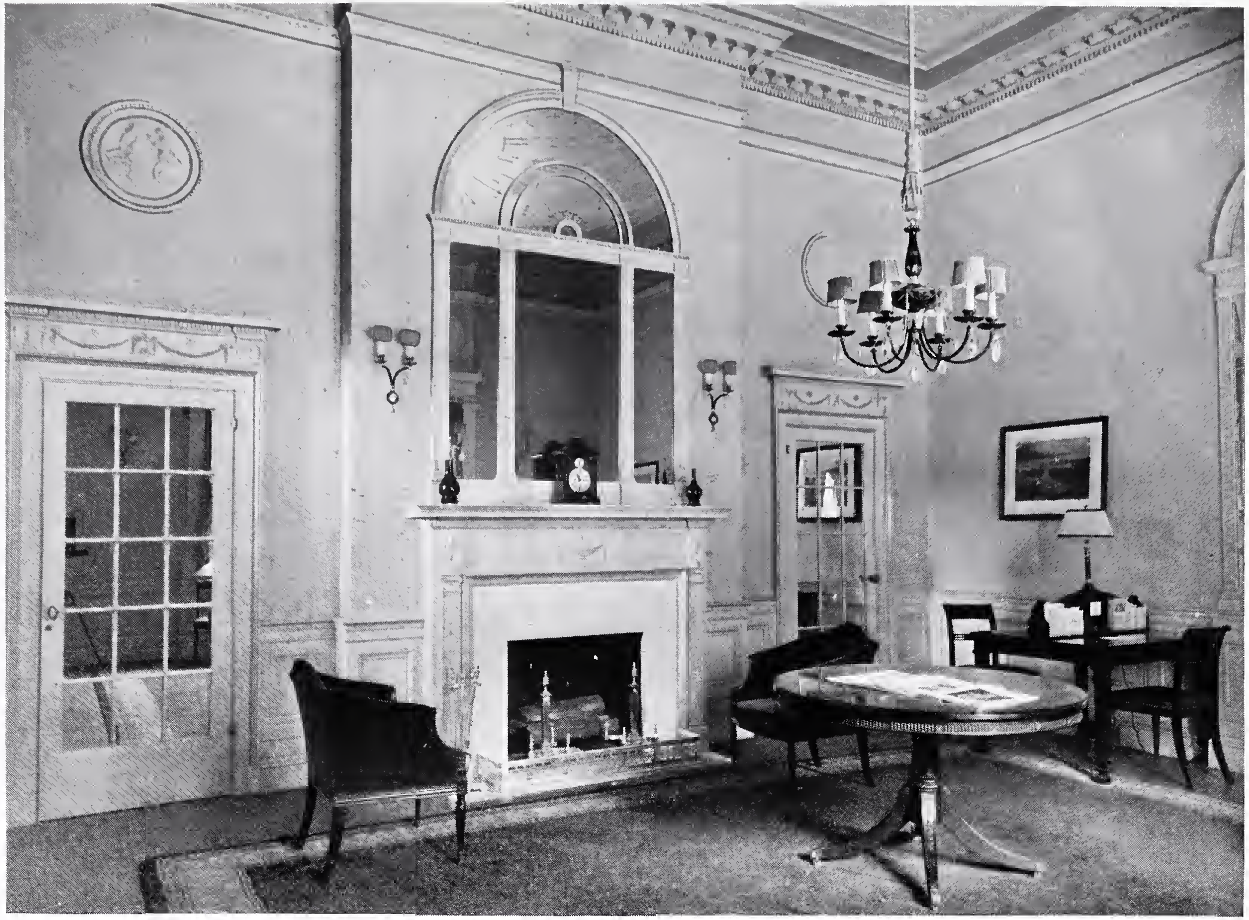
The ladies' banking room, to the right of the entrance, is entered directly without crossing the main banking floor. This room is remarkable in its creation of a quiet and leisurely atmosphere, where in comfortable chairs and at well-appointed desks the matter of money, so distasteful to many women, may be discussed at ease. Two large banking win-



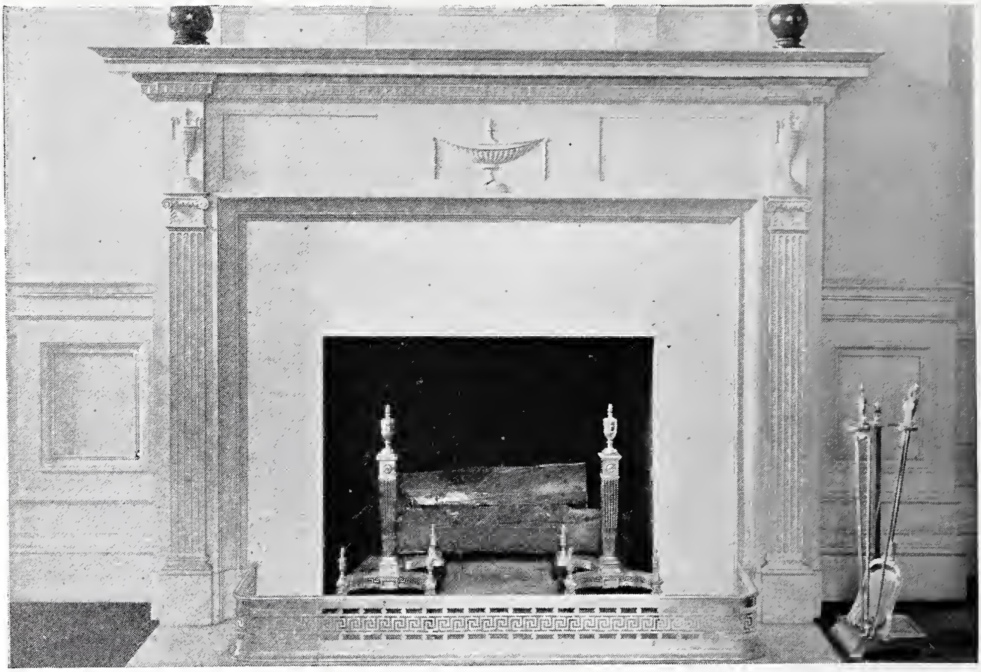
MAIN BANKING ROOM—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK. CROSS & CROSS, ARCHITECTS.



LADIES' BANKING ROOM—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK. CROSS & CROSS, ARCHITECTS.



LADIES' BANKING ROOM—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK. CROSS & CROSS, ARCHITECTS.



FIREPLACE IN LADIES' BANKING ROOM—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK.
Cross & Cross, Architects.

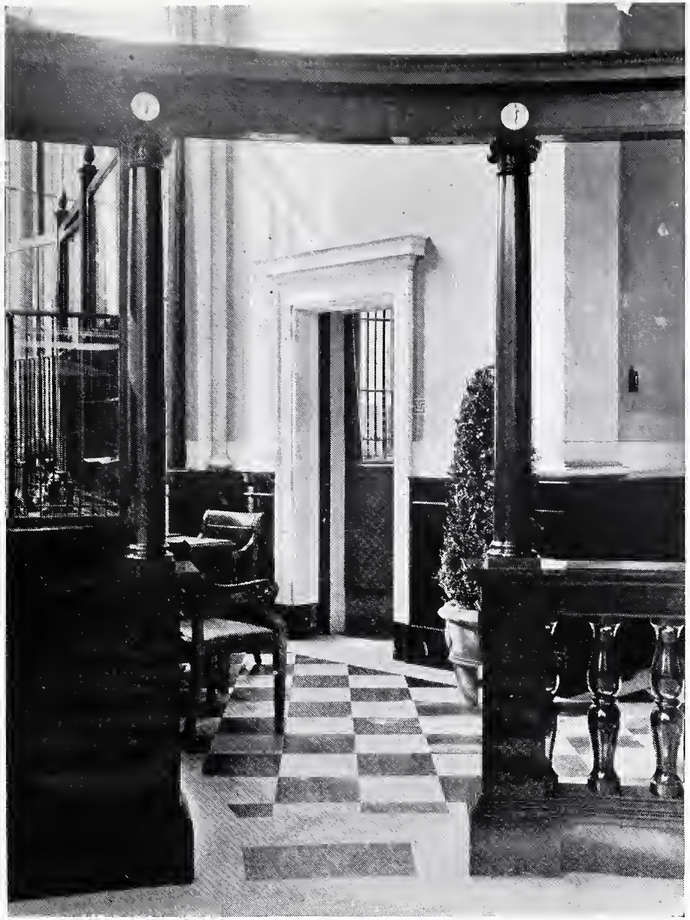
dows open into this room from the enclosures of the receiving and paying tellers.

Here is the extreme of simple elegance, with the white woodwork typical of the Adam style, soft toned walls, and carpets and upholstery of a neutral shade. The mahogany furniture carries out the spirit of the room with comfort and dignity and the details of brasses and hardware bear close inspection. The chandelier, pendent from its silken cord, presents a tasteful adaptation of the historical style to the requirements of modern illumination, black and silver combining with crystal lustres to produce a subdued brilliancy. In the side-lights, the crystal and black are repeated, forming the setting for the silver coin at the base. The design and execution of the plaster ceiling also deserve special mention. Furnished in conformity with this room is the small retiring room for visitors, entered by a door at the right of the fireplace. In both of these rooms the appointments of desks and dressing table are arranged with the utmost nicety both as regards convenience and taste.

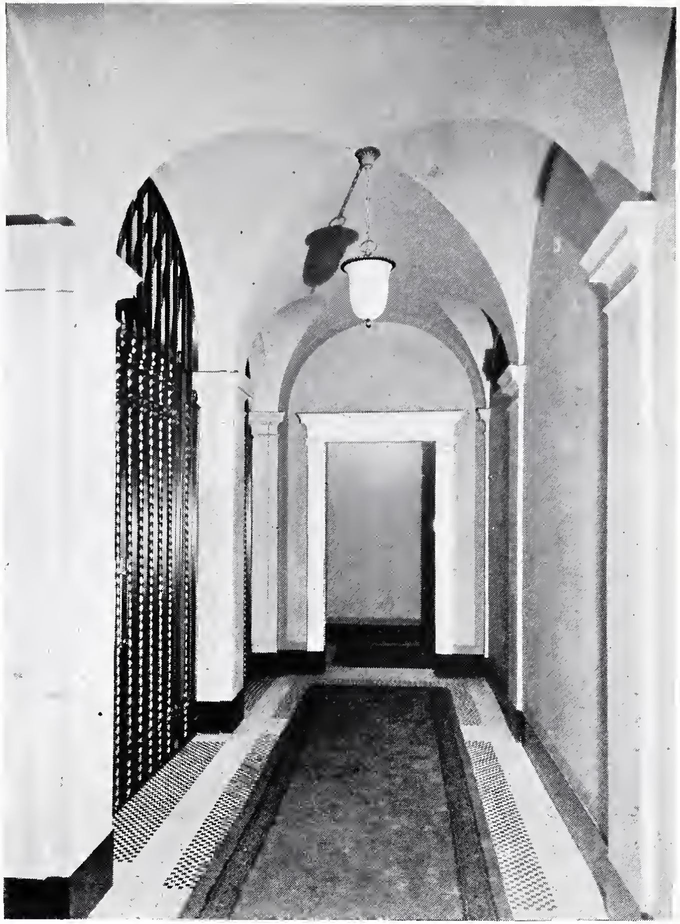
From the small entrance lobby of the ladies' banking room an elevator descends to the safe deposit department. Here, warned by an electric signal, the official in charge is ready to open the grille and admit the visitor. This floor is particularly interesting in that the care bestowed upon its arrangement and decoration is frequently lacking in similar departments of other banks. While all the decoration is quite subordinate to the purely utilitarian purpose, the general scheme is well worked out. The central vault is surrounded by its circulation, from which open small cubicles furnished with tables, chairs and telephones.

A second floor above the main banking room contains the working space of the staff and the necessary stock room, while two so-called mezzanine floors in the ell are devoted to locker rooms and lavatories for officials and staff.

The introduction of steam heat and electricity from the outside has made



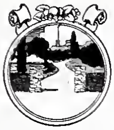
ENTRANCE TO CONFERENCE ROOM—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK.



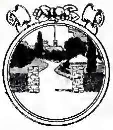
LOBBY TO SAFE DEPOSIT DEPARTMENT—SIXTIETH STREET BRANCH OF THE GUARANTY TRUST COMPANY OF NEW YORK.

possible the reduction of the machinery room to a minimum with a proportionate elimination of dust and dirt. The finish of all the service dependencies is simple and workmanlike.

The building suggests to the casual observer, at the first glance, another bank building far downtown—the great house of J. P. Morgan and Company. There is a similarity in the treatment of the corners and in the windows, while the material used in both cases is identical. The impression created is that of a replica in reduced size; an impression, however, entirely dispelled by closer observation, which shows the scale to be as delicate as that of the Morgan Library. Thus we find here a striking combination of qualities suggestive of two such distinct types—as a great downtown banking house and the cameo-like library of a connoisseur. This union in one building of the two extremes of business and leisure provides us with a means of estimating the extent to which the structure gives architectural expression to the modern ideal of public service in its particular community.



EXAMPLES OF THE COUNTRY HOUSE WORK OF WILLIAM ADAMS



BY CHARLES P. WARREN

THE four country houses designed by William Adams which are illustrated in the following pages are an interesting study, because while differing from one another they are nevertheless solutions of the same problem and exhibit in common certain features of plan and qualities of design characteristic of Mr. Adams's work. These characteristics are: (a) Adaptability of the plan to the conditions of the site and of the exposure; (b) straightforward and commonsense arrangement of rooms and adaptability to the requirements of the household; (c) good proportions of rooms; and (d) appropriateness of design and of details.

The houses are those respectively of Howard S. Kniffin at Cedarhurst, L. I. (Figs. 1-4), of John F. Scott at Hewlett, L. I. (Figs. 5-10), of Norton Perkins at Lawrence, L. I. (Figs. 11-17), and of Frederick L. Richards at Great Neck, L. I. (Figs. 18-20).

It is to be noted that all of these houses are designed for the low, flat landscape of Long Island and for clients in about the same social sphere, so that the conditions are alike in all cases. How they are varied in each case to meet the particular requirements of the site is interesting.

(a) Adaptability of the plan to the conditions of the site and of the exposure. Too often architects are tempted to place their houses with the principal façade facing the main road or street, regardless of the view or of the exposure to the sun. In all of these plans, however, the main living rooms are so arranged as to face the most sunny and pleasing prospect and the one receiving the most favorable breeze in summer, which on Long Island is generally southwesterly, regardless of whether the house faces the road or backs upon it. Thus, in Mr. Kniffin's house (Fig. 2), the front of the house is really the back, the entrance front facing the road, which is toward the north. Most designers would have pushed the service wing farther to the south, in order that it would not protrude from the front; but this would have cut off the early morning sun from the dining room and the rest of the southern exposure, and therefore the present arrangement was adopted. Privacy is secured by a heavy planting of shrubbery, which conceals the service wing from the main drive.

In Mr. Scott's house (Fig. 5) the service wing faces the main road, but observe how it has been hidden by a fir plantation and how cleverly the entrance drive has been placed so that no prospect of the house is seen until the front springs into view. This arrangement gives the desirable southern and eastern exposure for the dining room, a southern exposure for the living room and a southern and western exposure for the sun parlor. Moreover, it gives sunlight and favorable breezes to all of the master bedrooms save one, which must be content with a northerly exposure.

The site of Mr. Perkins's house (Fig. 11) presents a different problem. Here the principal façade faces the main road, but it is not parallel with it because of the topography of the ground, which consists of a high ridge running northeast and southwest, on which the house was placed, allowing the land to fall away in all directions and giving the most favorable exposure for the rooms. The sun porch (Fig. 17) faces the south with east and west exposure; the living room also has sun the entire day through eastern and western windows, the dining room has the desirable eastern exposure and the majority of the master bedrooms are exposed to the sun and to the breeze.

In Mr. Richards's house (Fig. 20) the

entrance is on the north, and all of the principal rooms face the south. This house, while somewhat larger than Mr. Kniffin's, has the same general arrangement of rooms; but observe how the service wing has been pushed upward to obtain the maximum amount of light and air. Had Mr. Kniffin's arrangement been followed blindly, the service wing below the main body of the house would have cut off much of the sun and air. The failure to recognize that a plan suitable for one site cannot be blindly followed on all other sites has spoiled what would otherwise have been many a good plan. A notable example of this is a fine old house on a southwest corner facing Gramercy Park, in New York. The entrance hall is on the left, back of which are the stair hall and pantry. On the right is the living room and back of that the dining room. This plan was made originally for a southeast corner, which gave windows along the eastern side for the living and dining rooms. When the plan was used for the southwest corner the builders did not realize that it should be reversed, and the result is that the hall, stairs and pantry have windows facing the east, while the living and dining rooms are alongside of a brick wall and receive light only at the ends. The foregoing analysis of Mr. Adams's plans shows that he has correctly located his houses and made the most of all of the advantages of the site.

(b) Straightforward and common-sense arrangement of rooms and adaptability to the requirements of the household. An examination of these four plans shows that they are composed of three elements: first, the main body of the house, containing the living room, stair hall, dining room and master bedrooms; second, a wing devoted to the lounging quarters, containing the sun parlor, billiard room, porch, piazza, etc., and, third, another wing for the service, comprising the kitchen, pantry, servants' hall and maids' rooms.

In the main body of the house are the living and dining rooms, separated by a spacious hall, from which they are entered by wide doors placed opposite one another and giving a long vista and a sense of ampleness and spaciousness. At each end is the fireplace, appropriately terminating the vista. The main hall in all cases runs through the house, with broad doors and side lights at each end, affording a view of the garden and making the first floor light and cheerful. One's first impressions upon entering a building are the most lasting; and the nobly proportioned halls of Mr. Adams, with their broad and comfortable stairs (Fig. 16), impress one with a feeling of dignity and hospitality. Depending upon the exposure of the house, the entrance is under the stairs or opposite to it. In Mr. Kniffin's (Fig. 2) and Mr. Scott's (Fig. 7) houses the entrance is under the stairs, which are placed on the north side, so as not to occupy the valuable southern exposure required for the living rooms. When so planned the entrance always opens into a vestibule to shut off cold draughts in winter weather. Also notice that coat closets and lavatories have been provided (Fig. 17) which are entered from the hall. All of the second floor stair halls are provided with outside windows, flooding all parts of the house with light and sunshine and banishing dark and gloomy corridors. The bedrooms are generally provided with fireplaces and windows on two sides, insuring cross-draughts and good ventilation. All bedrooms have ample closets so planned as not to encroach upon the bedroom space, and, above all, most of them are connected with a private bath. Mr. Adams has been unusually liberal with his bathrooms, the ratio being three bathrooms to four bedrooms.

The service wing contains a pantry, a kitchen, a laundry and a servants' dining room or hall, the last mentioned room being the most important. Anyone who has employed a man on the premises, as gardener, coachman or chauffeur, knows that it is difficult to keep a cook when the men have to be fed in the kitchen. The separate laundry is also a good feature of these plans. Another excellent feature is the servants' porch, which is always on a side of the house invisible from the principal rooms and approached generally, as in Fig. 20, by a separate service drive. Housekeepers will also

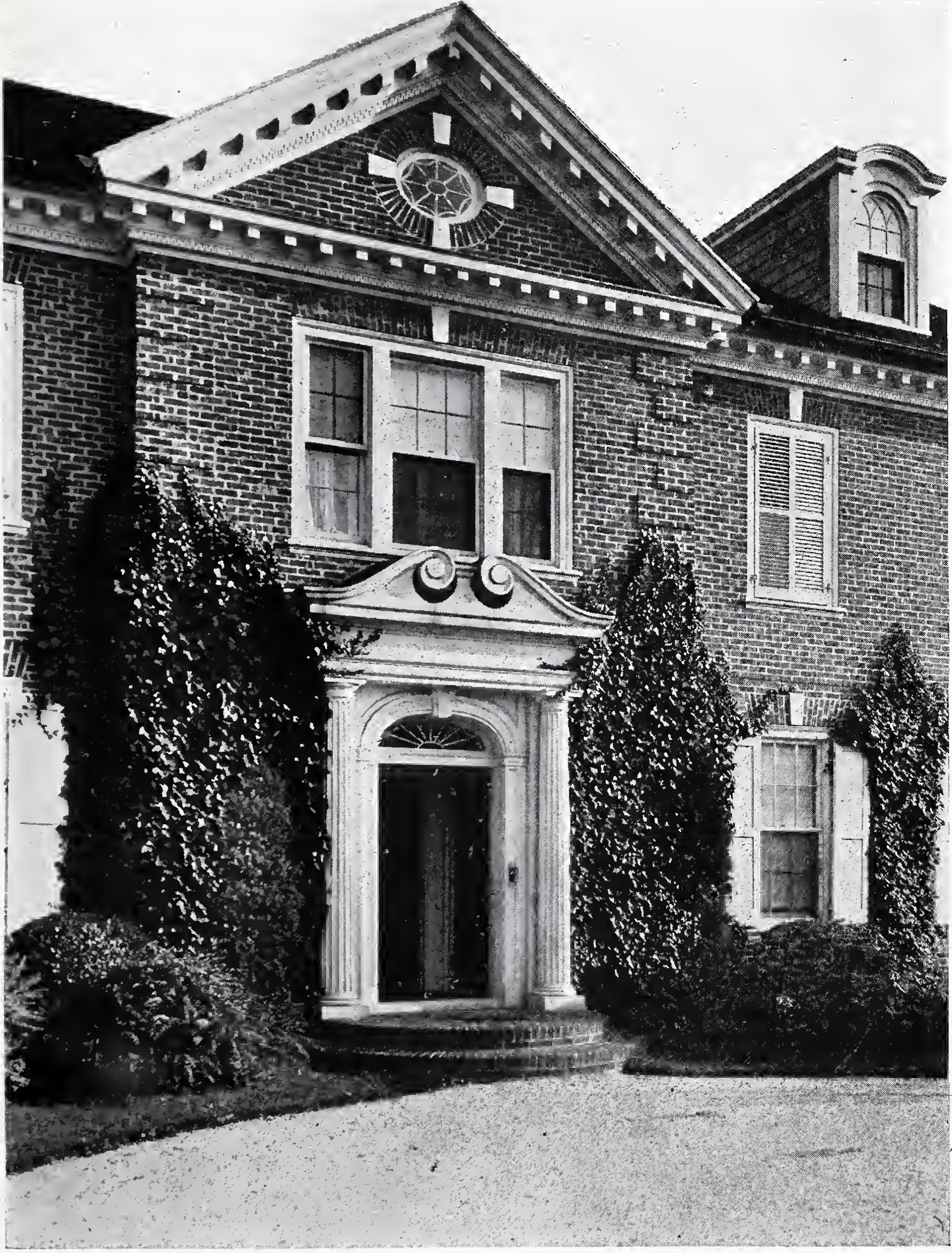


FIG. 1.—ENTRANCE—COUNTRY HOUSE OF HOWARD S. KNIFFIN, ESQ., CEDARHURST, L. I. WILLIAM ADAMS, ARCHITECT.

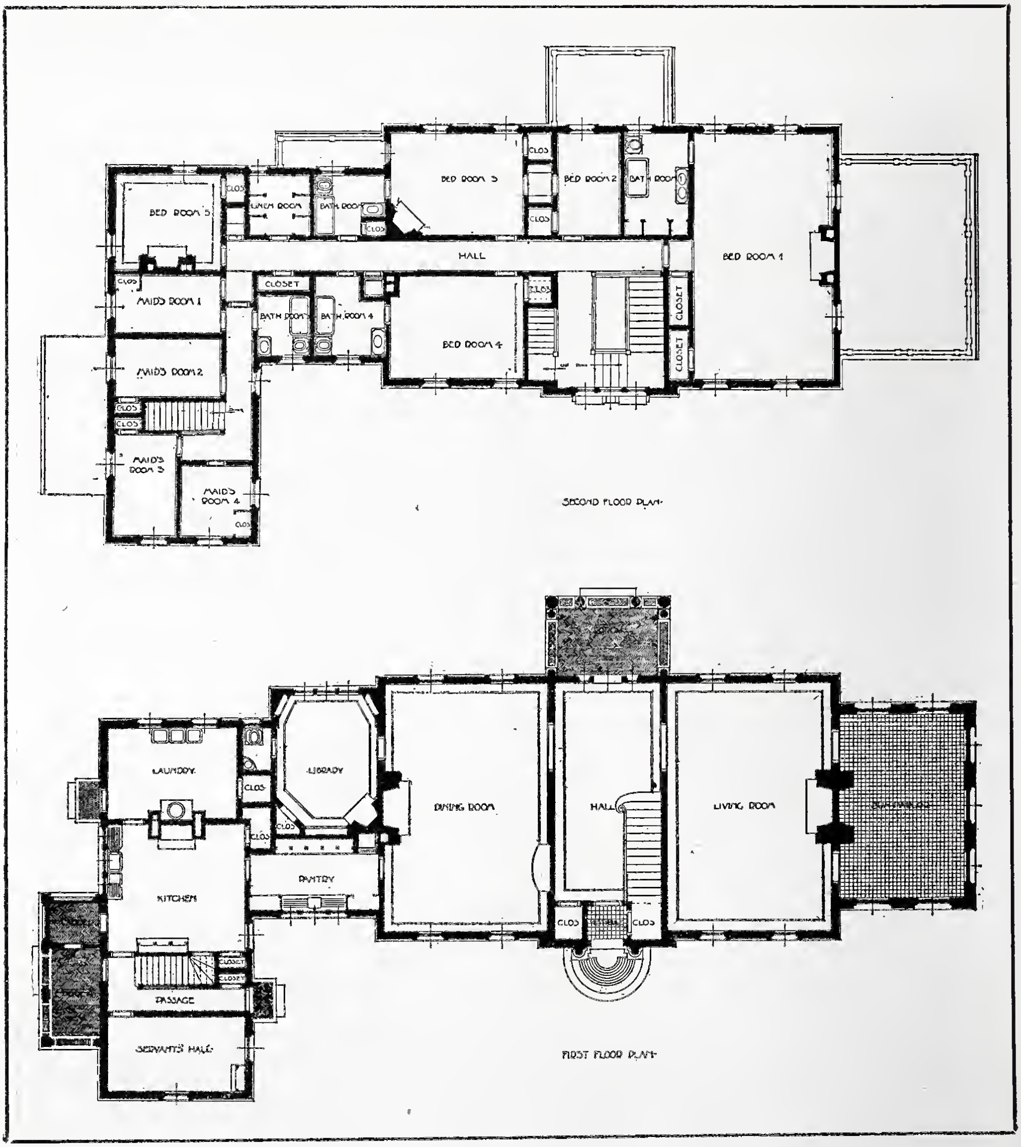


FIG. 2.—FLOOR PLANS—COUNTRY HOUSE OF HOWARD S. KNIFFIN, ESQ., CEDARHURST, L. I. WILLIAM ADAMS, ARCHITECT.

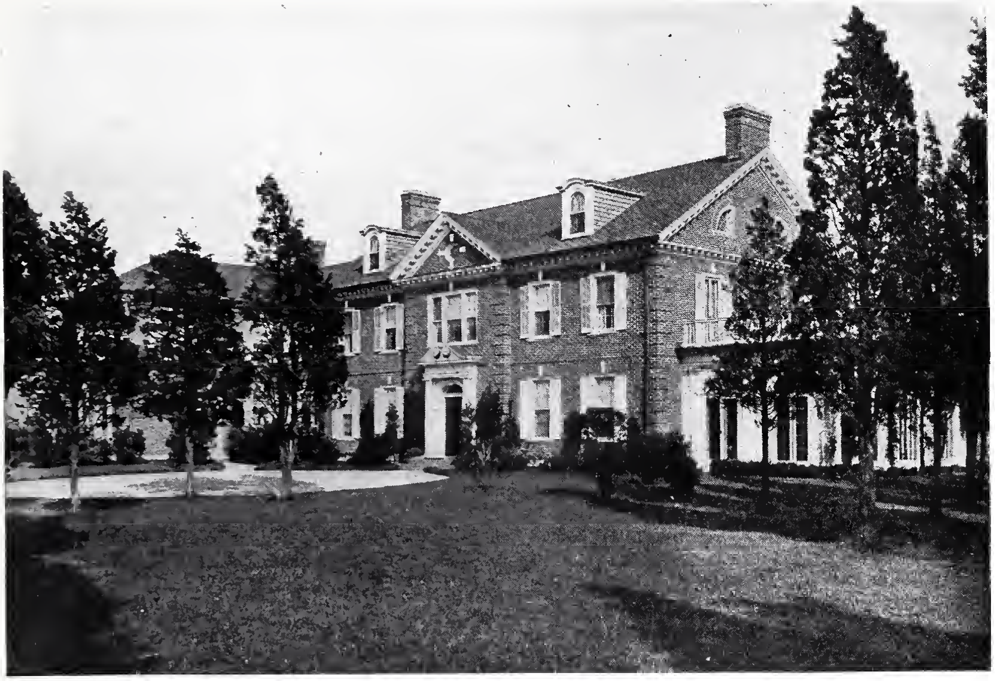


FIG. 3.—COUNTRY HOUSE OF HOWARD S. KNIFFIN, ESQ., CEDARHURST, L. I.
William Adams, Architect.

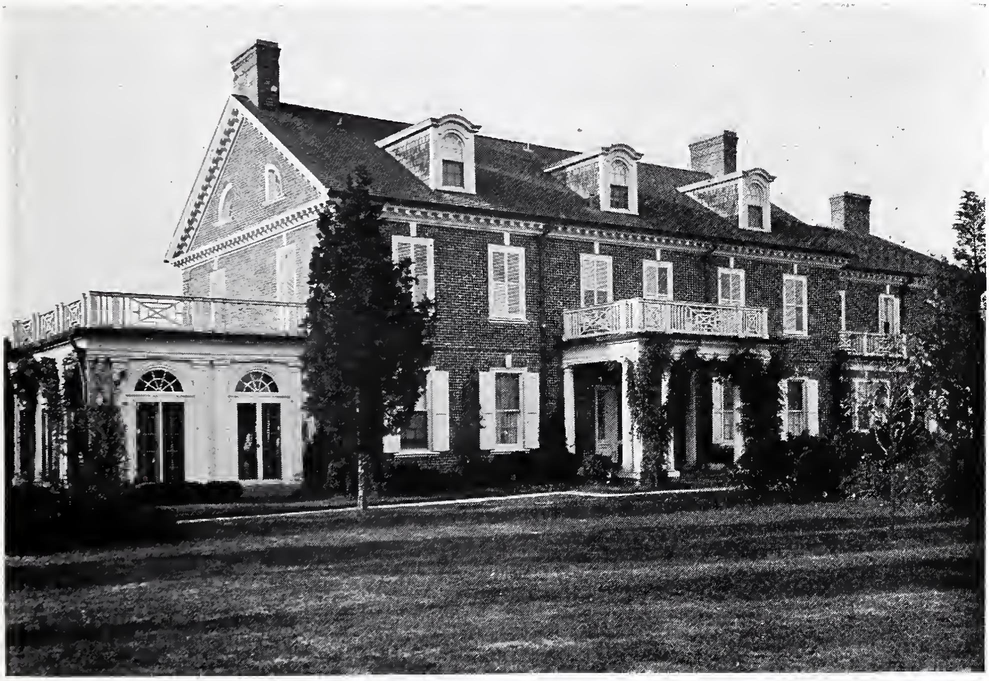


FIG. 4.—COUNTRY HOUSE OF HOWARD S. KNIFFIN, ESQ., CEDARHURST, L. I.
William Adams, Architect.

appreciate the larder or ice room entered from the porch and communicating with the kitchen, making the delivery of ice through the kitchen unnecessary and the frequent complaints of muddy floors unknown. The same thought and care have been expended in planning the maids' rooms, the majority of which have closets like the master's rooms. There is no passing through one room to get into another. All open into a light, bright corridor (Fig. 20), and ample bathrooms and toilets are provided in all cases. Another good arrangement is that the cellar is approached from the service stairs adjacent or near to the kitchen, and not from under the main stairs, a common arrangement in many plans.

(c) Good proportions of rooms. The architects of the Georgian period paid particular attention to the proportions of their rooms, and these were often known as cube rooms or double cube rooms. Mr. Adams's proportions for his large rooms are a cube and a half; that is, the rooms are about once and one-half as long as they are wide. The living room in the plan at Fig. 17, where the fireplace does not project into the room, is superior to the others. Projecting fireplaces and chimneybreasts very frequently spoil the effect of spaciousness by narrowing the room at the place where it is most frequently used, thus making the room appear cramped and crowded instead of large and spacious. Mr. Charles A. Platt recognizes this, as a study of any of his plans will show. Another good feature of all Mr. Adams's work is the simplicity of it. No forced arrangements are made for the sake of introducing some "feature" or producing a "unique effect." Note the absence of inglenooks, alcoves and bays. His rooms are all set firmly on their foundations, with their "four sides squared to the wind."

The same care is taken with the proportions of the maids' rooms, which are not mere cubbyholes of the minimum area permitted by the New York Building Code, seventy-two square feet. In addition to the servants' bath in the plan at Fig. 20, which is centrally located and accessible to all maids' rooms, the rooms themselves are provided with lavatories. It is safe to say that housekeeping in Mr.

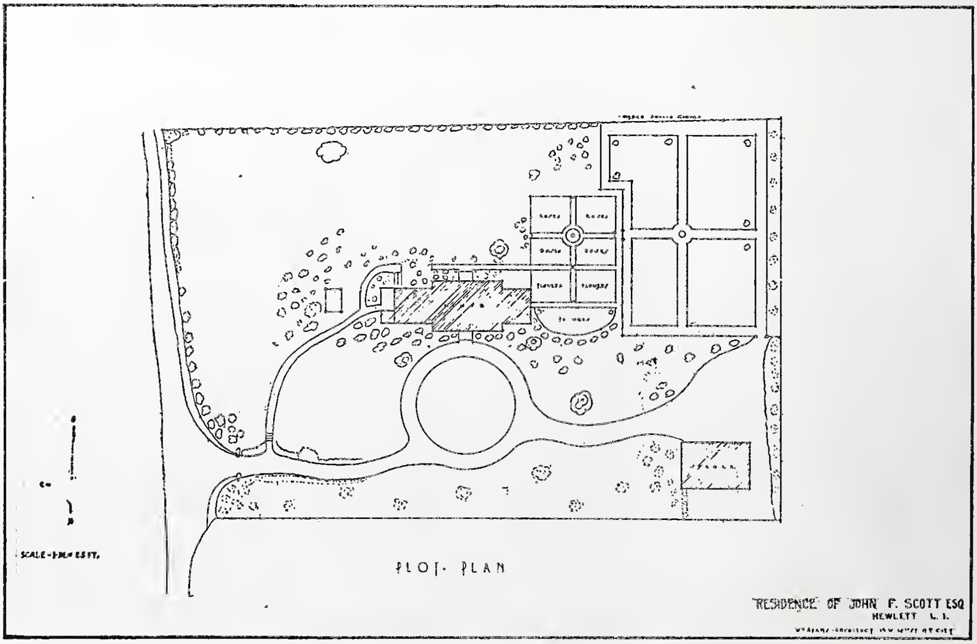


FIG. 5.—PLOT PLAN—COUNTRY HOUSE OF JOHN F. SCOTT, ESQ., HEWLETT, L. I.
William Adams, Architect.

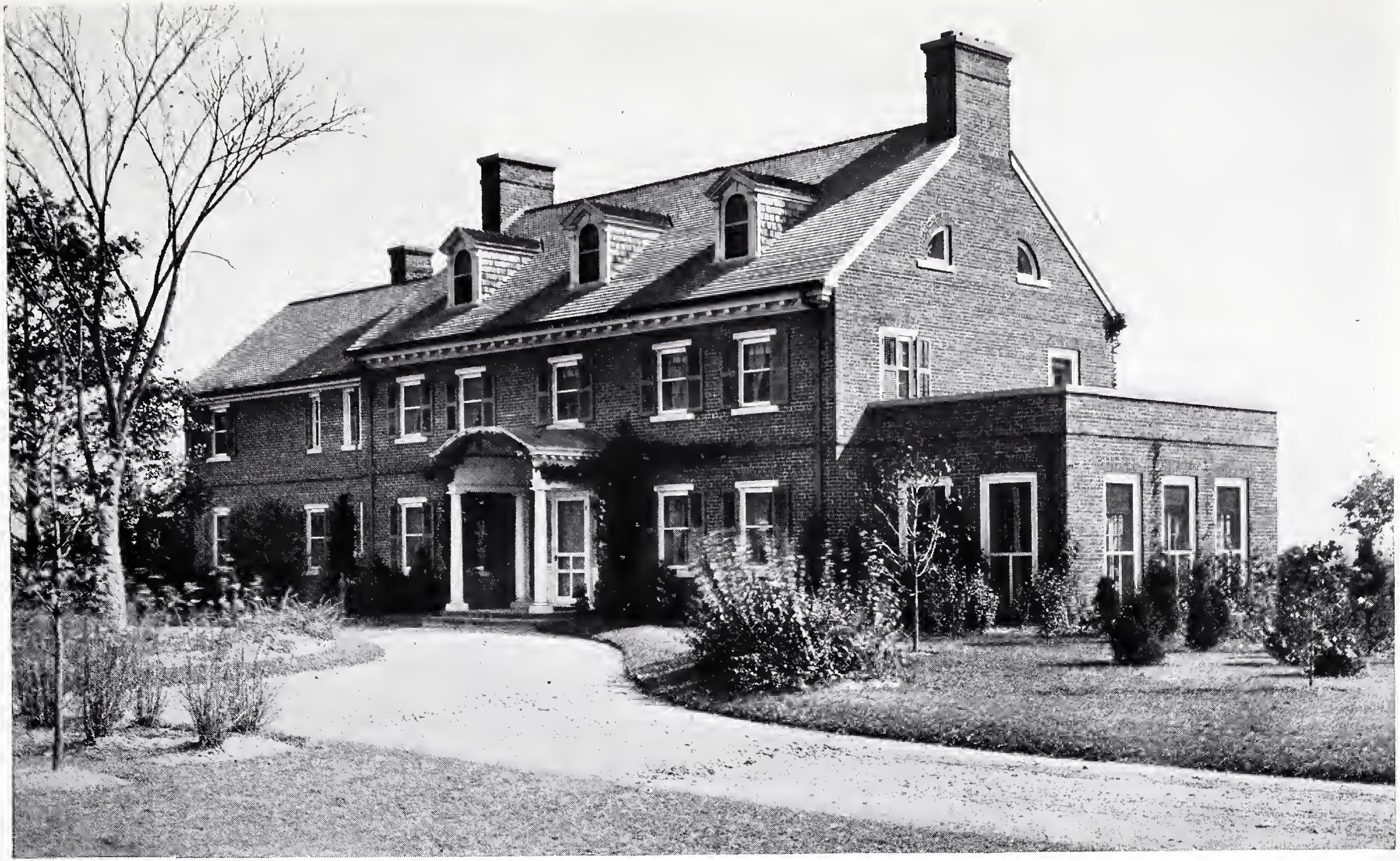


FIG. 6.—COUNTRY HOUSE OF JOHN F. SCOTT, ESQ., HEWLETT, L. I. WILLIAM ADAMS, ARCHITECT.

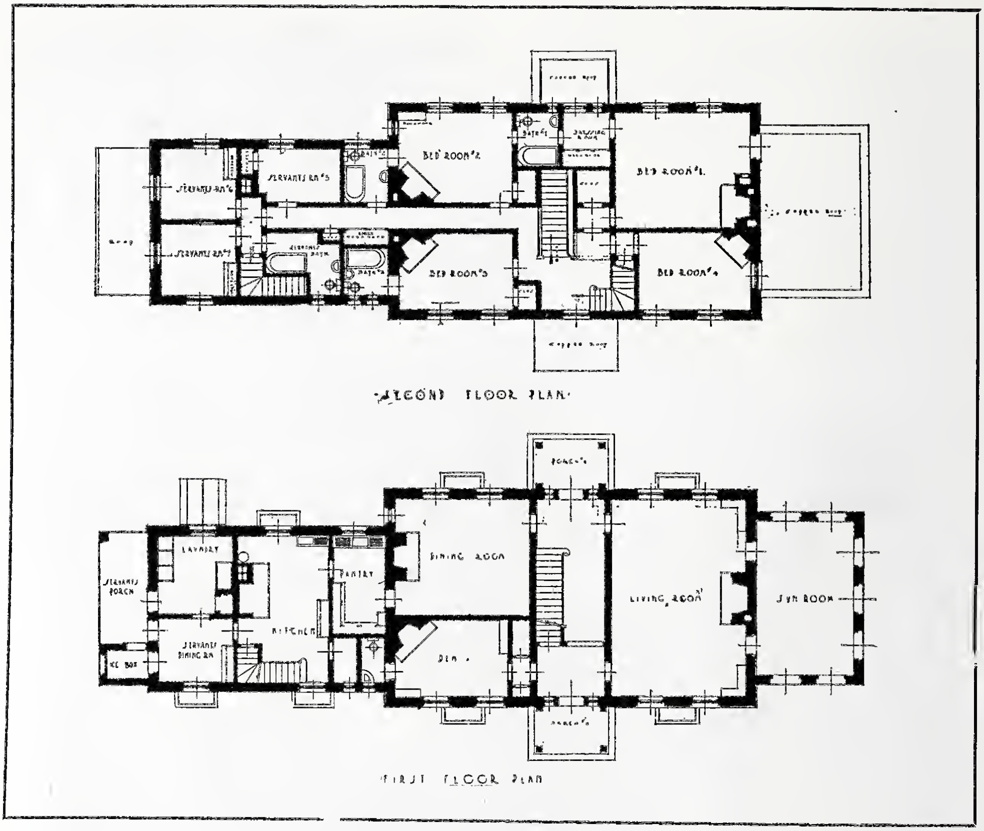


FIG. 7.—FLOOR PLANS—COUNTRY HOUSE OF JOHN F. SCOTT, ESQ., HEWLETT, L. I. William Adams, Architect.

Adams's houses must run along very smoothly and that there will never be any occasion for maids to leave because of dark, dismal and uncomfortable rooms, nor because every convenience for their comfort has not been provided.

(d) Appropriateness of design and of details. All of these houses are built on Long Island, where the characteristic landscape is low and flat. The designs seem to blend into the landscape and are all broad, long and low, resembling in this respect their prototypes, the long, low, shingled Long Island farmhouses. In our native American architecture certain types have been developed which seem best suited for certain localities and which persist through all changes of style and fashion. What is more appropriate in their respective localities than the one-story, gambrel roof, brownstone farmhouse of New Jersey, the hipped roof quarterdeck mansion of Salem, Marblehead, and other New England seaport towns, or the long, low, Dutch farmhouse of Long Island? Mr. Adams has preserved the best traditions of the Long Island type in his houses. They all look as though they belonged to their site and were married to it, and do not impress one as being foreign importations uncomfortably settled amidst uncongenial surroundings. While the spirit of the old designs has been maintained, the materials have been changed in keeping with modern tendencies. The original Long Island house was of frame, covered with deep hand-split shingles, with an exposure of about eleven inches. Years ago, when wood was cheap and abundant, it was easy to obtain these shingles, which, because they were split out of the

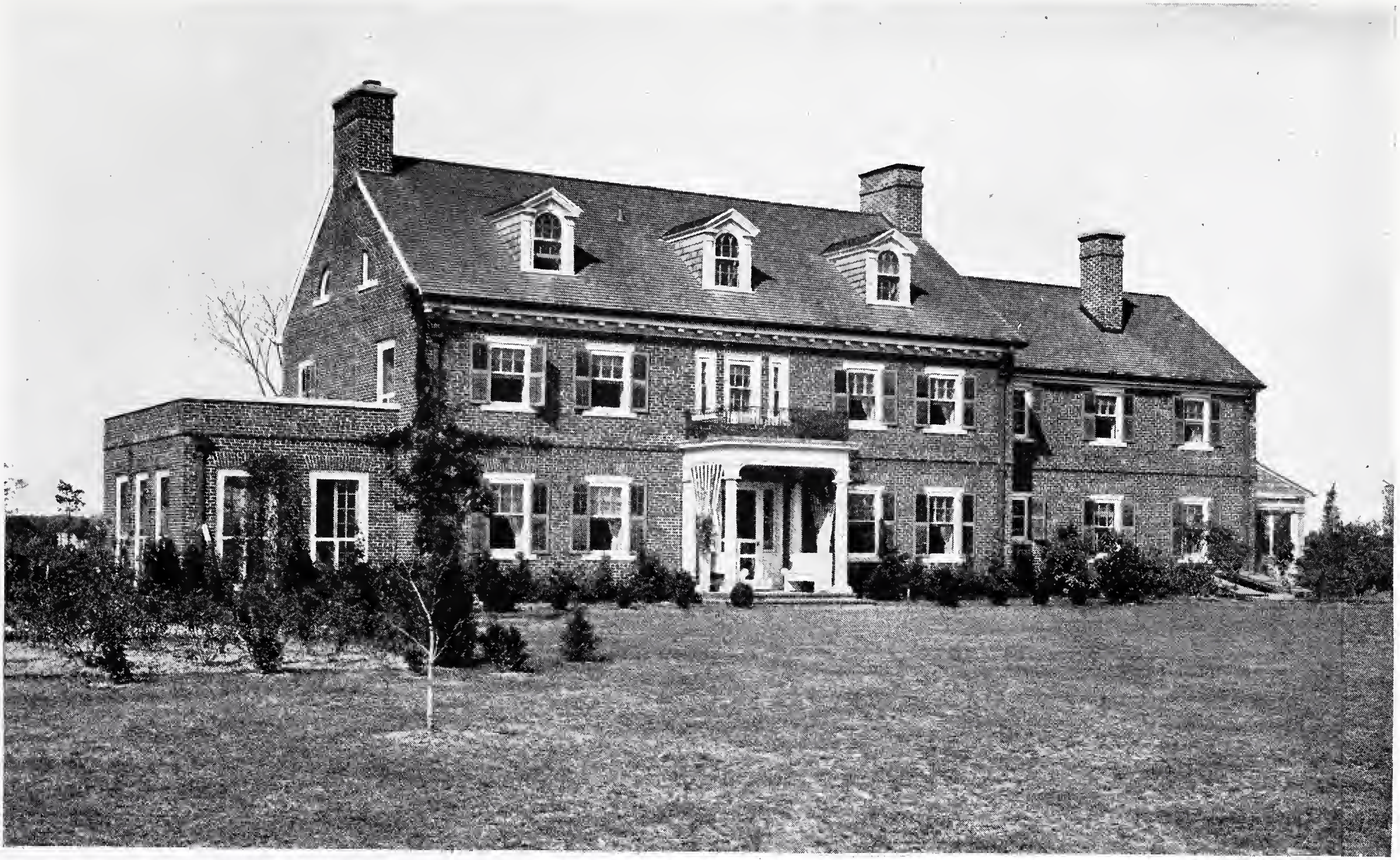


FIG. 8.—COUNTRY HOUSE OF JOHN F. SCOTT, ESQ., HEWLETT, L, I. WILLIAM ADAMS, ARCHITECT.

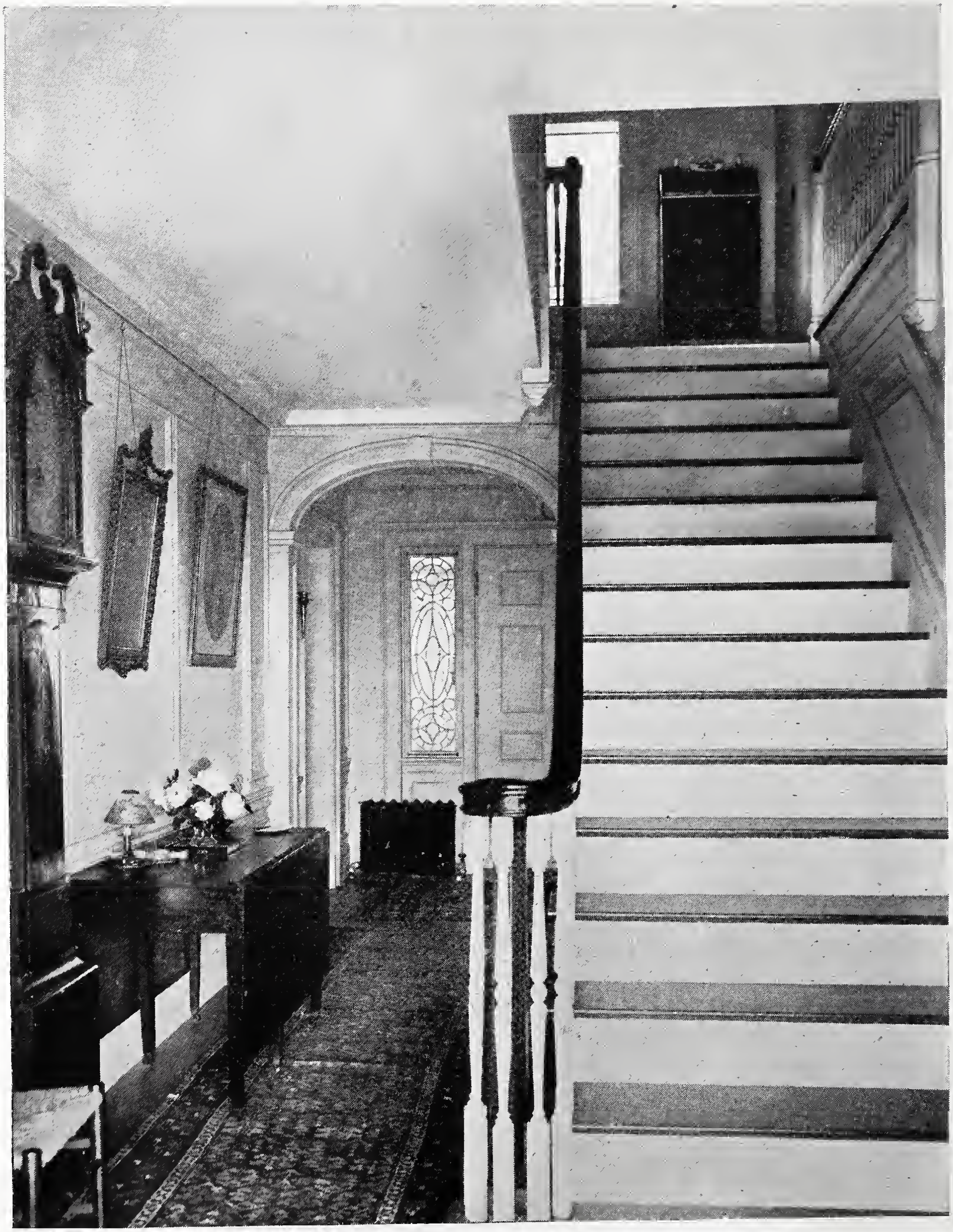


FIG. 9.—HALL—COUNTRY HOUSE OF JOHN F. SCOTT, ESQ., HEWLETT, L. I. WILLIAM ADAMS, ARCHITECT.

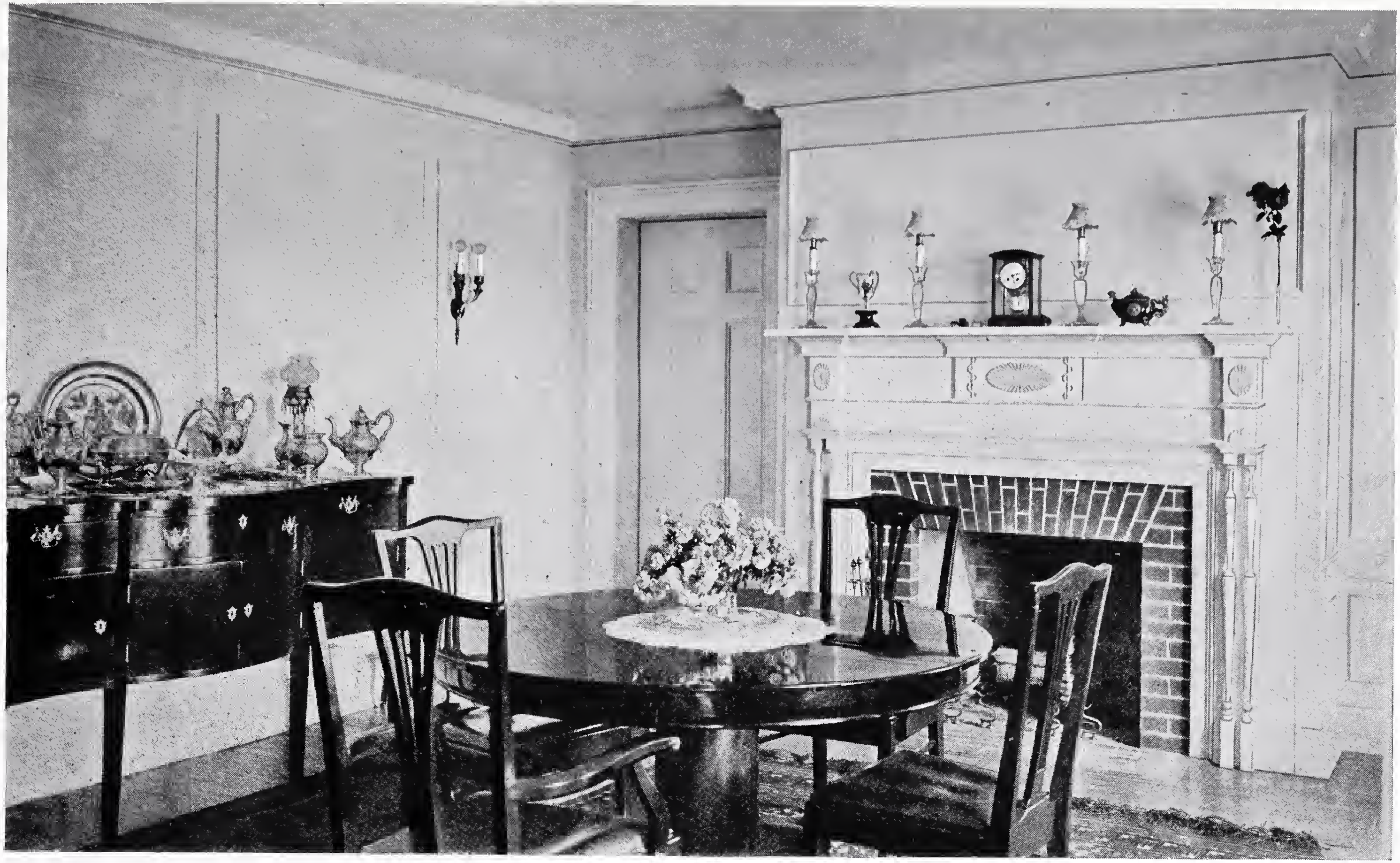


FIG. 10.—DINING ROOM—COUNTRY HOUSE OF JOHN F. SCOTT, ESQ., HEWLETT, L. I. WILLIAM ADAMS, ARCHITECT.

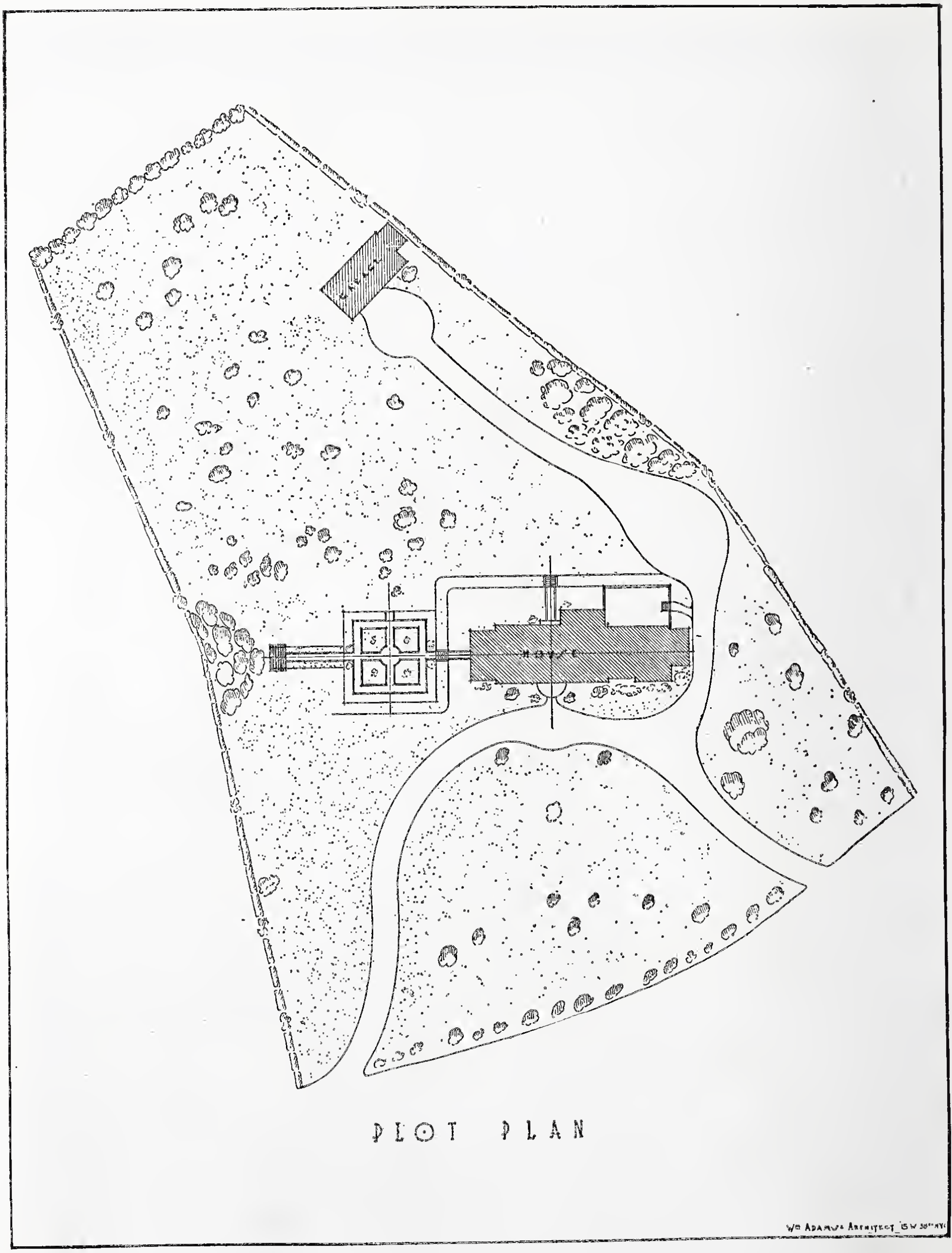


FIG. 11.—COUNTRY HOUSE OF NORTON PERKINS, ESQ., LAWRENCE, L. I. WILLIAM ADAMS, ARCHITECT.

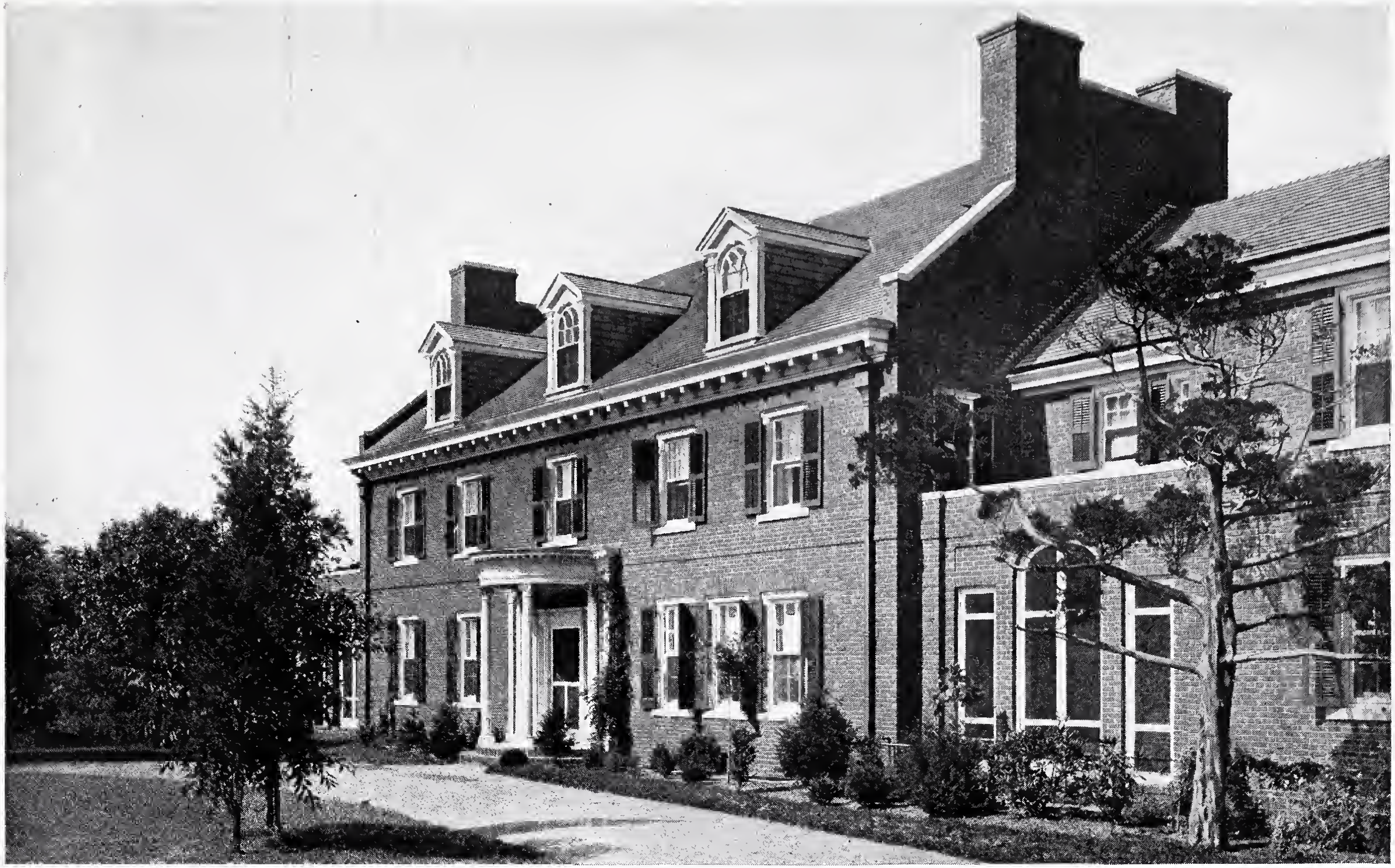


FIG. 12.—COUNTRY HOUSE OF NORTON PERKINS, ESQ., LAWRENCE, L. I. WILLIAM ADAMS, ARCHITECT.

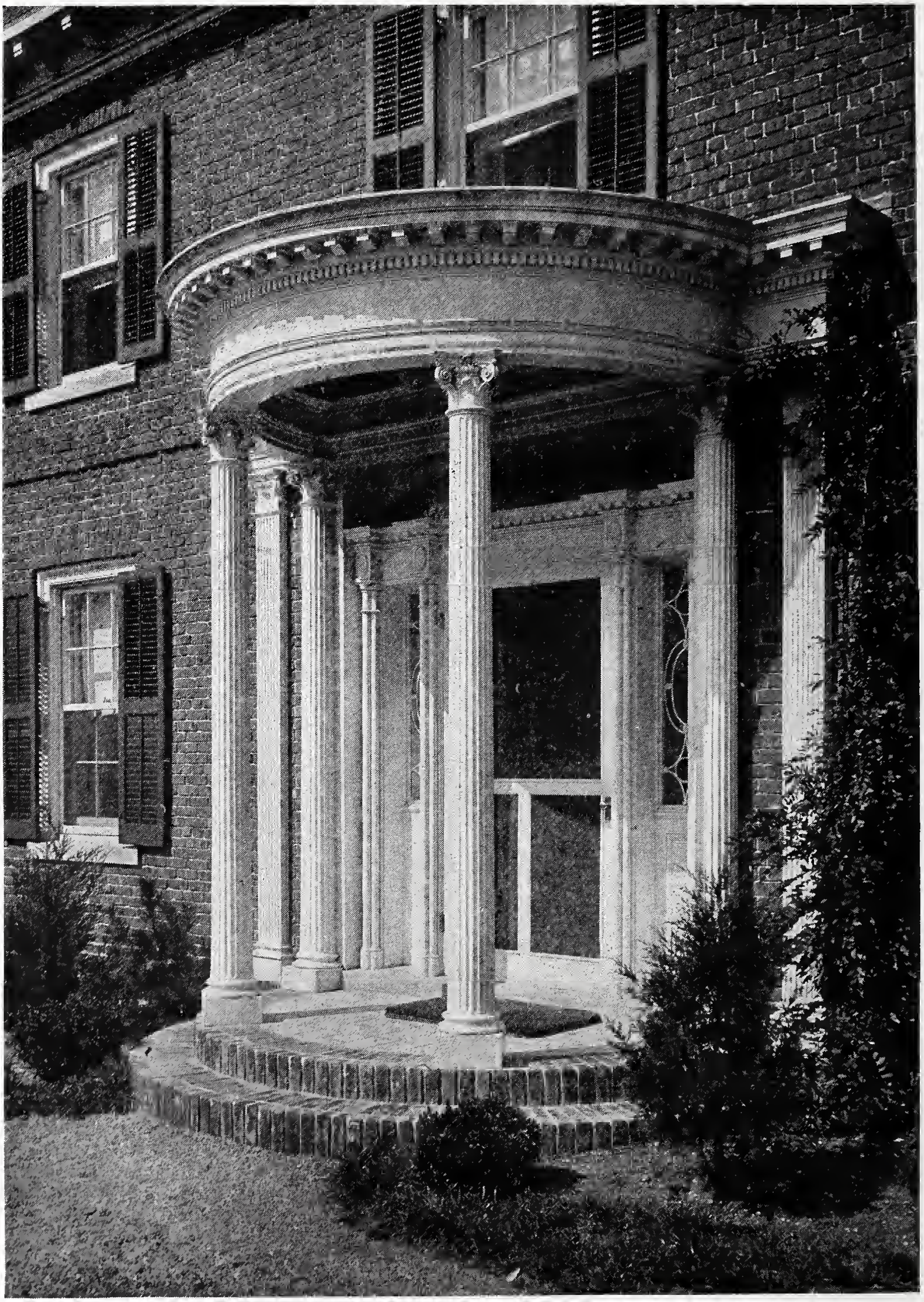


FIG. 13.—ENTRANCE — COUNTRY HOUSE OF NORTON PERKINS, ESQ., LAWRENCE, L. I. WILLIAM ADAMS, ARCHITECT.

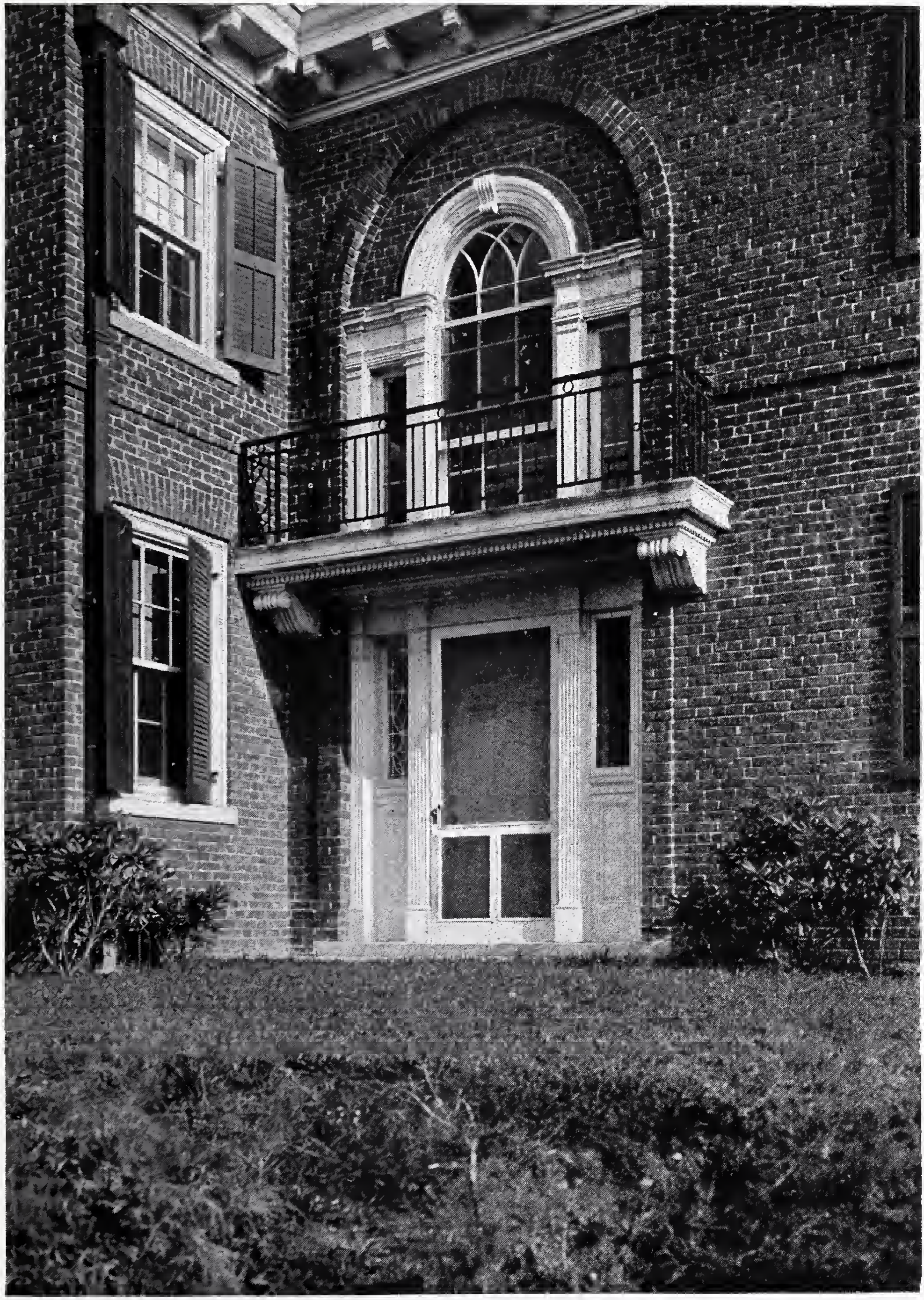


FIG. 14.—ENTRANCE FROM GARDEN—COUNTRY HOUSE OF NORTON PERKINS, ESQ., LAWRENCE, L. I. WILLIAM ADAMS, ARCHITECT.

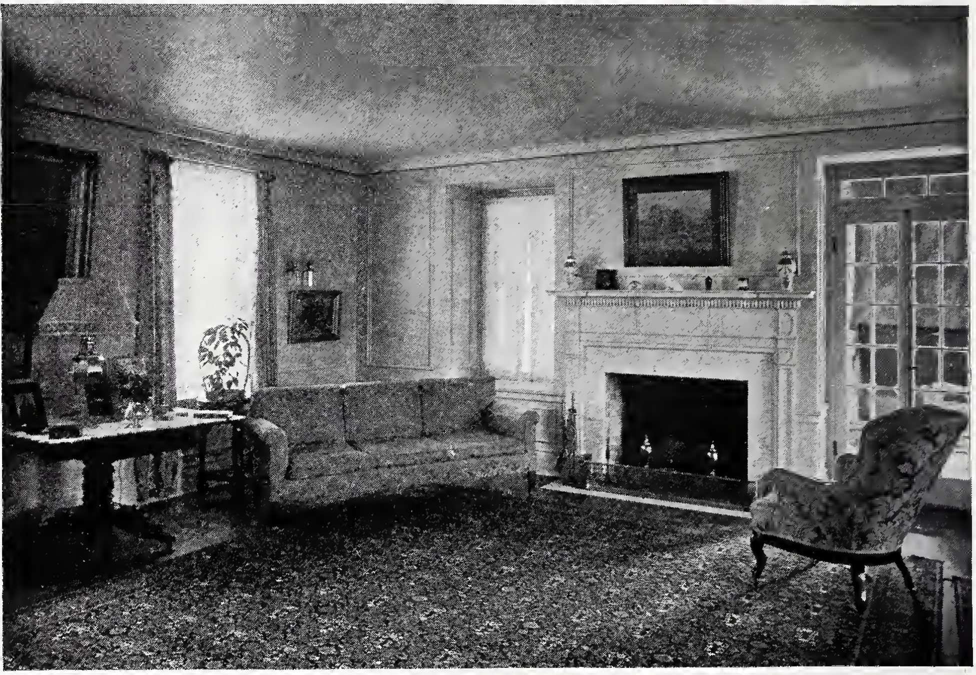


FIG. 15.—LIVING ROOM—COUNTRY HOUSE OF NORTON PERKINS, ESQ., LAWRENCE, L. I.
William Adams, Architect.

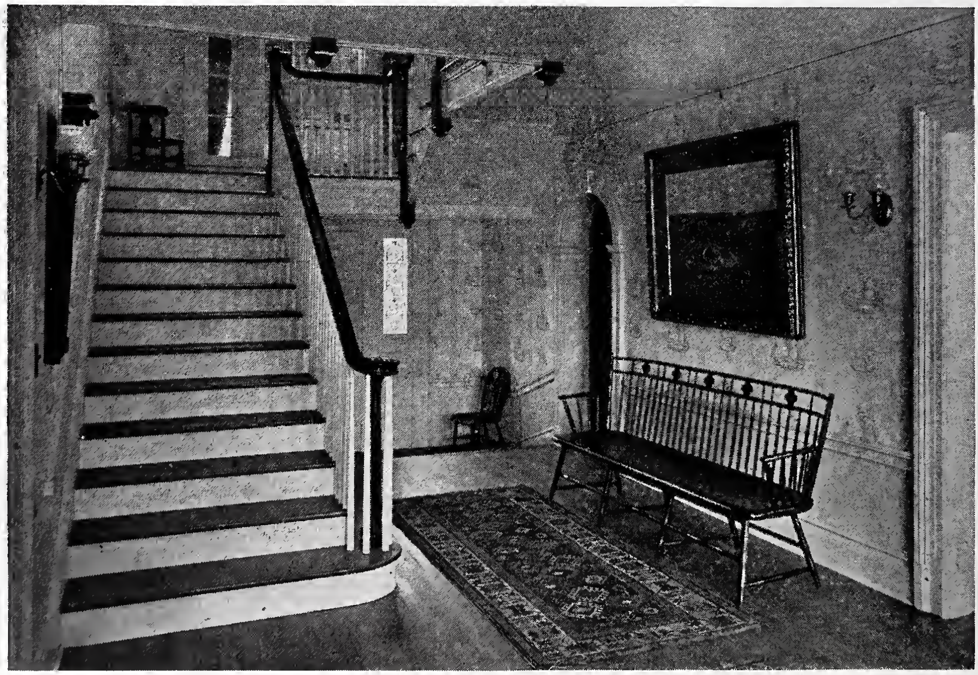


FIG. 16.—HALL—COUNTRY HOUSE OF NORTON PERKINS, ESQ., LAWRENCE, L. I.
William Adams, Architect.

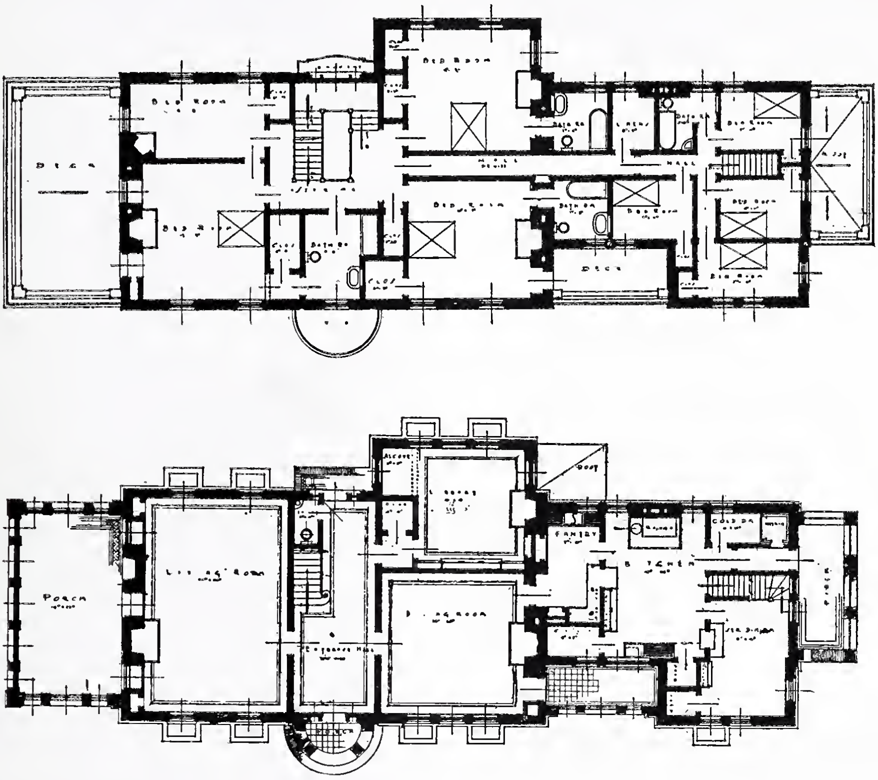


FIG. 17.—COUNTRY HOUSE OF NORTON PERKINS, ESQ., LAWRENCE, L. I.
William Adams, Architect.

heartwood, were very durable. At the present time, however, owing to the increasing scarcity and expense of wood, shingles are difficult to obtain, and, moreover, since they are generally sawed and seldom split from the log, they are cross-grained, full of sap, warp and check badly and require frequent painting to preserve them, and even then they are not so durable. Mr. Adams has, therefore, faced his frame with brick instead of shingles, which has the advantage of requiring no upkeep. The change of material has not, however, destroyed the character of the architecture; and Mr. Kniffin's house (Figs. 3 and 4) maintains the charm and best traditions of the Long Island farmhouse. The long, low roof, the proportions of the windows and the fenestration are all reminiscent of the older type, and, if shingles were substituted for the bricks, it would be difficult to tell that this is a modern house.

As before mentioned, this house is of frame construction, sheathed and papered like the shingled houses, but lined on the outside with four inches of brickwork instead of shingles. A further advantage of the brick lining is that it is warmer in winter and cooler in summer than a shingled frame would be. The other houses (Figs. 8, 12 and 18) have solid brick walls. Note how this difference is expressed in the treatment of the gable ends. Fig. 8 suggests the coping of a masonry wall, while Fig. 3 is characteristic of frame construction.

Not only are these houses remarkable

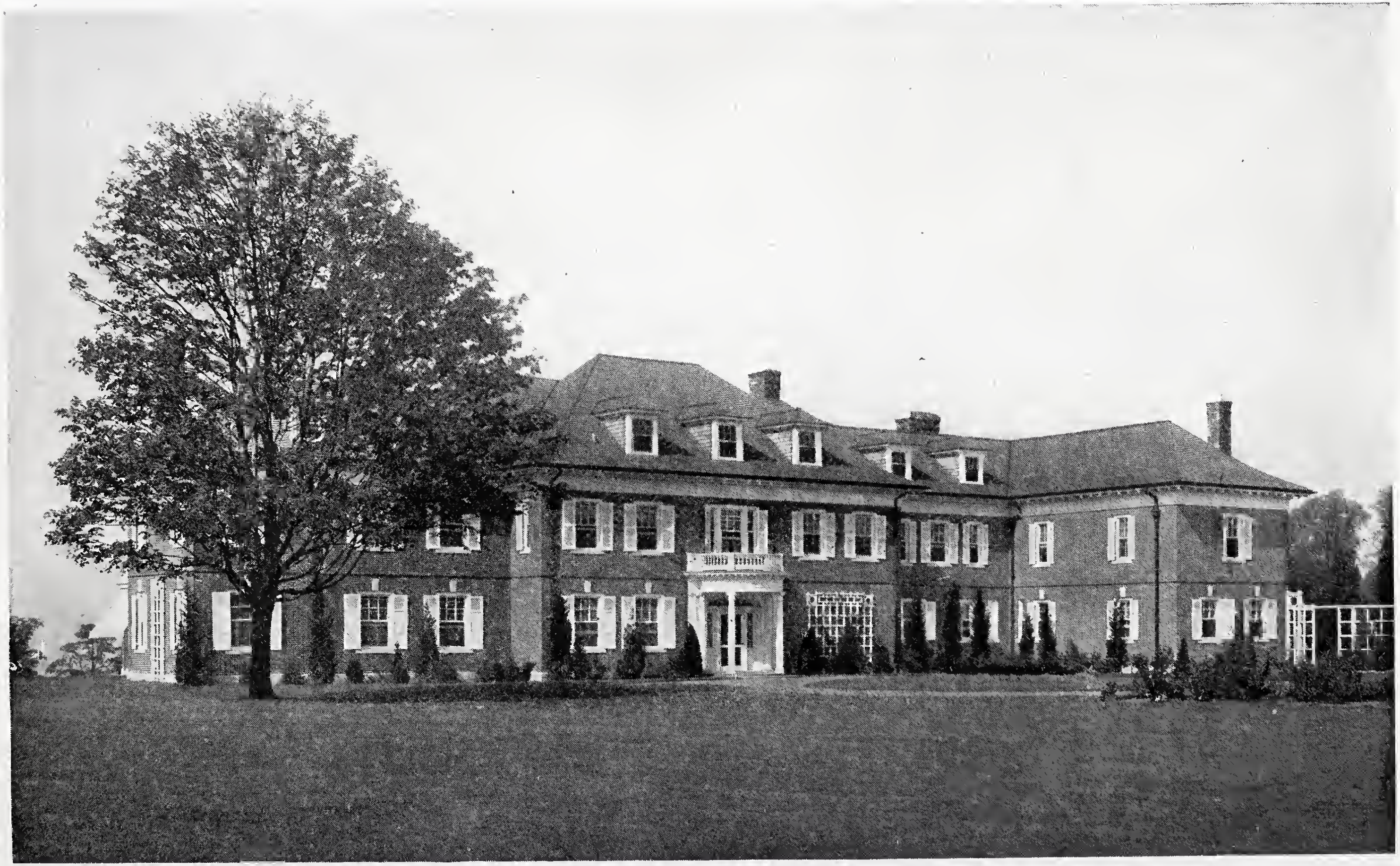


FIG. 18.—COUNTRY HOUSE OF FREDERICK L. RICHARDS, ESQ., GREAT NECK, L. I. WILLIAM ADAMS, ARCHITECT.

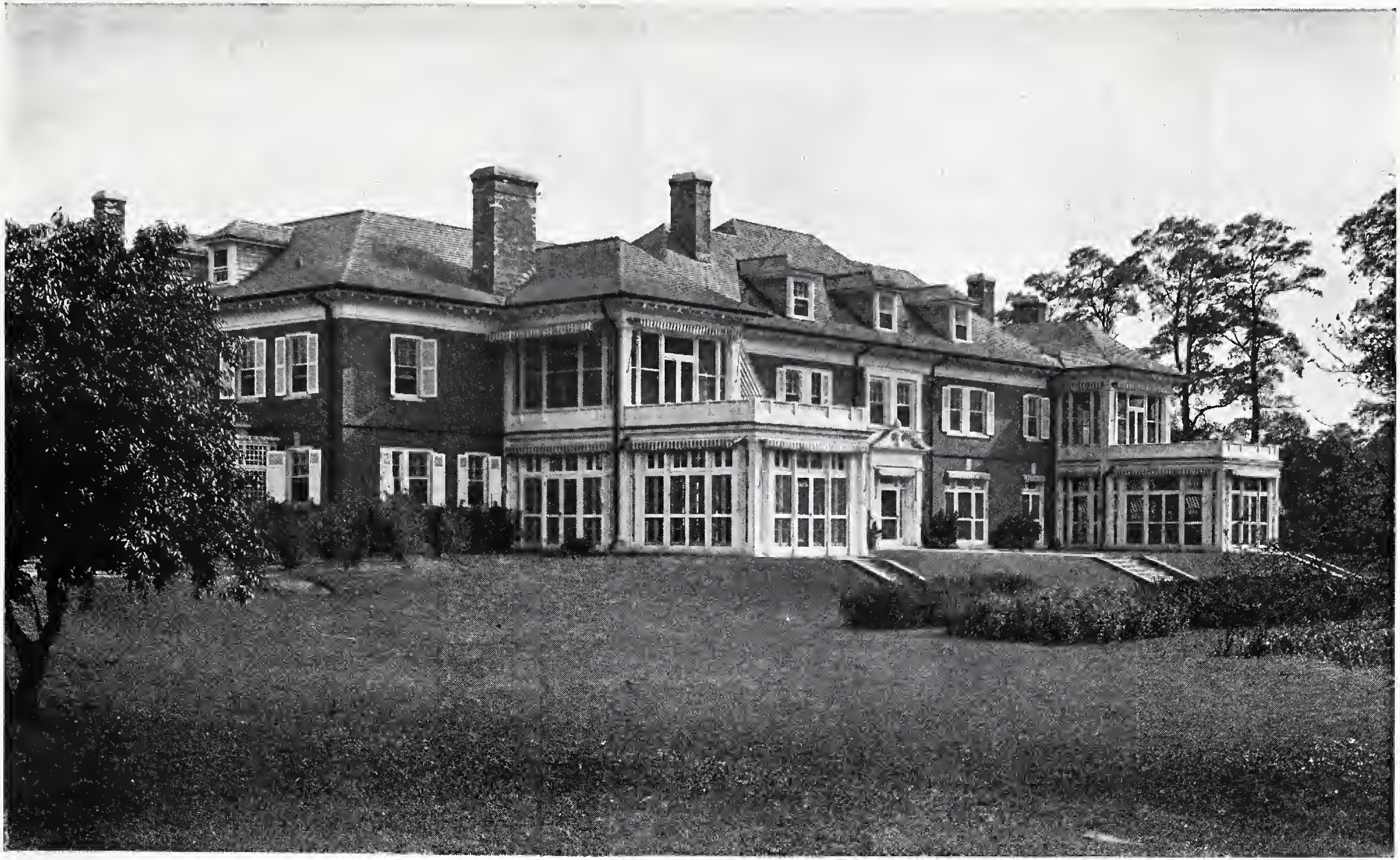


FIG. 19.—COUNTRY HOUSE OF FREDERICK L. RICHARDS, ESQ., GREAT NECK, L. I. WILLIAM ADAMS, ARCHITECT.

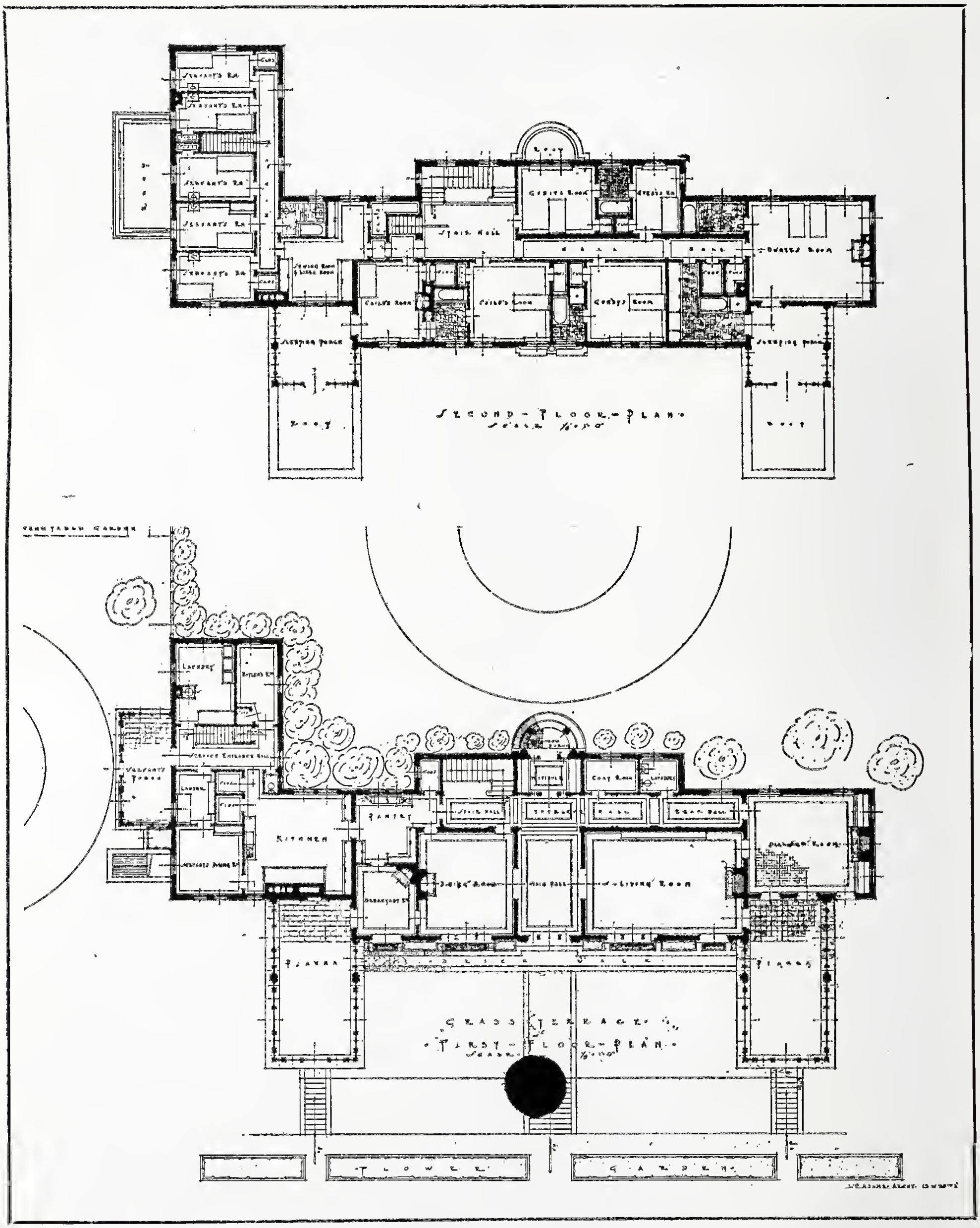


FIG. 20.—RESIDENCE OF FREDERICK L. RICHARDS, ESQ., GREAT NECK, L. I. WILLIAM ADAMS, ARCHITECT.

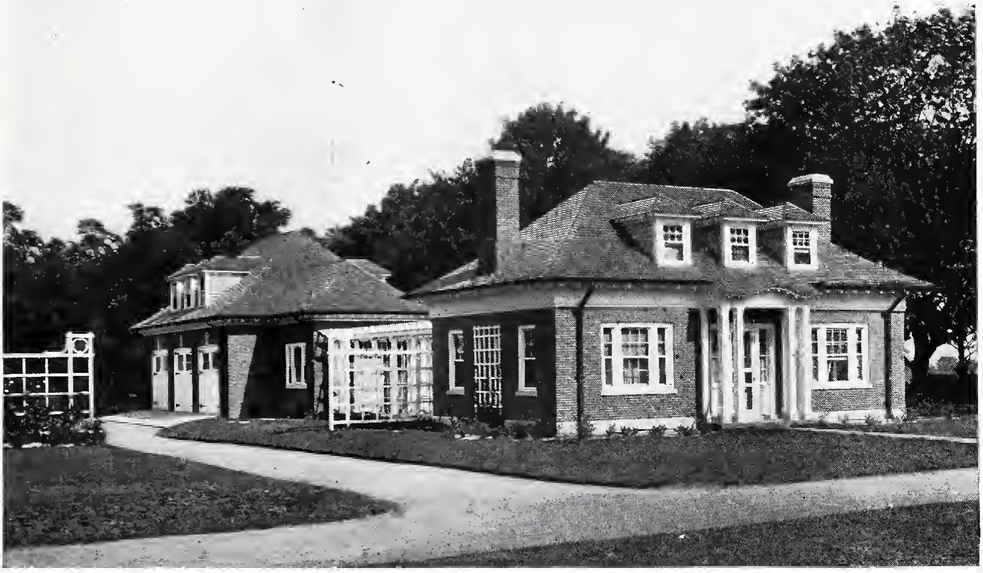


FIG. 21.—GARAGE AND GARDENER'S COTTAGE—COUNTRY ESTATE OF FREDERICK L. RICHARDS, ESQ., GREAT NECK, L. I.
William Adams, Architect.

for judgment in the choice of material, but they are also remarkable for simplicity in design and sound workmanship. What, for instance, could be more simple and dignified than the entrance to Mr. Kniffin's house (Fig. 1) or that of Mr. Perkins's house (Fig. 13); also the cornices of Figs. 3 and 18 and the dormers of Fig. 12? In fact, all of Mr. Adams's work is full of taste and is remarkable for its fitness and restraint. His detail is all reserved, but never austere. Most of it is confined to his porches, where sometimes, as in Fig. 14, he will permit himself a balcony. His interiors, of which unfortunately we have only a very few illustrations, are characterized by the same simplicity and taste. Recall the average pretentious house, which is more like a museum—and a very poor one at that—than like a home, and compare it with the well appointed and refined charm of the interiors of Mr. Perkins's house (Figs. 15 and 16).

The same thought and study expended on the house is given to the surroundings and outbuildings—the broad and hospitable approach to Mr. Richards's house (Figs. 18-20), and the charming and picturesque garage and gardener's cottage (Fig. 21).

In short, Mr. Adams sees his problem steadily and sees it as a whole. His houses, which begin by fitting their sites, have invariably a quiet, refined and distinguished air. Good proportions have been at the bottom of this unbroken sequence of beautiful houses. The broad masses of his composition, the placing of his doors and windows, always admirably expressive of the plan within, and the thoughtfully arranged lines of his façades, will ever continue to be a source of pleasure and enjoyment.

PRINCIPLES OF POLYCHROME IN SCVLPTVRE BASED ON GREEK PRACTICE

TEXT AND DRAWINGS BY LEON V SOLON

IF we assume that the treatment of sculpture with polychrome is a distinct art, we must at the outset credit it with the capacity to realize a specific expression of beauty differing from any attainable with other means. The beauty inherent in a decorative method is only appreciable when the aggregate circumstances of its peculiar constitution are viewed at a given angle. A change of objective in the completion of any work in the arts is not conducive to satisfactory results. The sculptor who applies color to a carving which was conceived without that feature has an equal chance of success with the painter who uses an engraving on which he applies color in the hope of producing a painting. The basic plans for constructing an effect in light and shade and an effect in color differ in essentials; the elimination of all that is unessential to the desired effect from the superabundant data in nature determines their adequacy.

Modern polychrome sculpture in the majority of cases proceeds no further than to create a condition of mental expectancy. The proof that a method of procedure is fitting and that the conception is aligned on its objective is that a homogeneous result is obtained from which no integral part may be separated or eliminated without a sense of incompleteness resulting. This test is applicable to any effect produced by complex decorative methods. If, by the elimination of the main characteristic, a complete and undepreciated work remains, we may assume that the work was not impelled solely by that specific decorative intention.

The sculptor who would create works of the polychrome type must subject both conception of scheme and method to the stringent exactions of color if he would convert the grave risk attending its use into an assured benefit. In the first place, the subject must be selected and the composition controlled with the object of "carrying" color, as any accidental grouping of tint may be detrimental to decorative balance. Experimentation is obviously necessary to evolve the technique best fitted to the artist's individual expression, the data available in antiquity being often too remote from our conventions for complete adaptation. The relation of relief—that is to say, light—to color must be determined; experience will devise means whereby variation of tone may be produced from a flat color, through methods belonging to the sculptor's art, without resorting to meretricious practices of color manipulation.

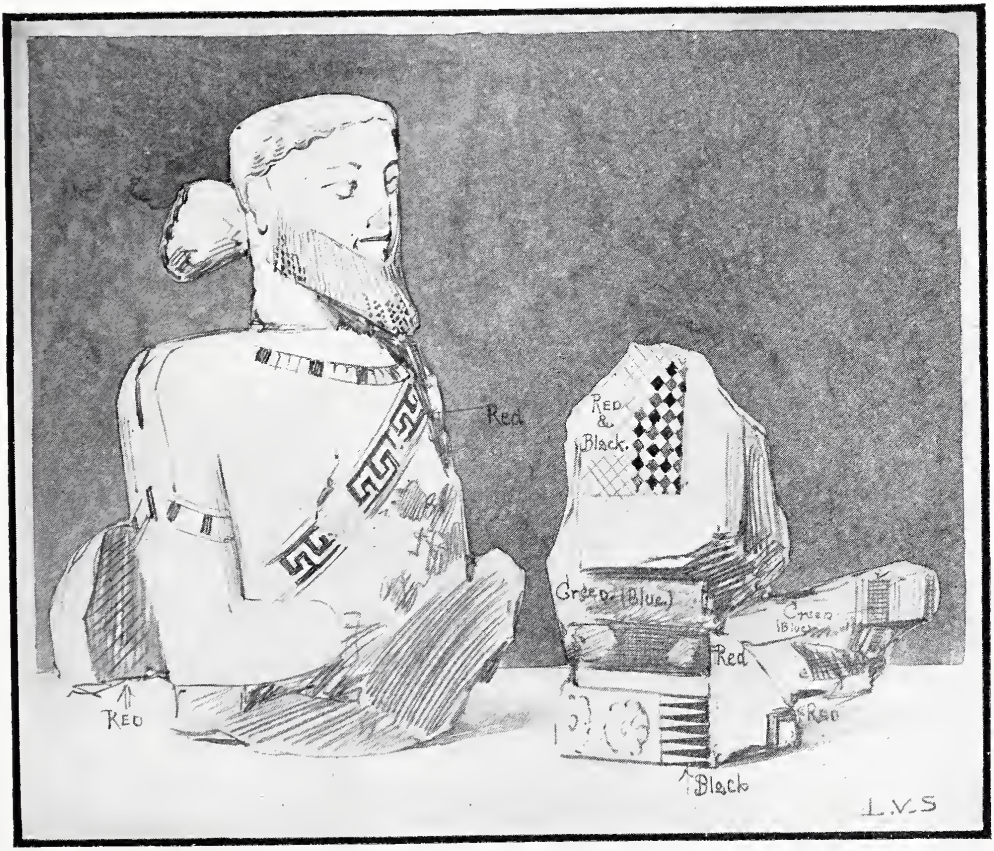
Gradation of tone from light to dark is not compatible with the dignity of sculpture. It is therefore essential that the inherent harshness of the flat tint be neutralized by other means. The attainment of this result will necessitate an analysis of the effect on color resulting from a variety of causes, such as the influence of sharply defined or subdued detail underlying it; the treatment of boundaries or edges of tint to neutralize the detached appearance of a flat color mass; the apparent change which occurs in tone value from its varying area or association with another color; the enrichment resulting from alternating and inlaid colors, and the decorative value of various tones of one color. These and many other considerations must be examined and applied to practice before polychrome sculpture can boast a basic technique such as is available in other arts.

Exterior circumstances have exerted an adverse influence reacting against the expansion of this art. Precedent, the safe-conduct of the artist, is in this case so remote and difficult of access that it is almost an unknown quantity. This practice, which in Greece would have been most remarked by omission, is in our day open to the imputation of eccentricity or *réclame*. The various forms of realism that of recent years have taken possession of the plastic arts have militated against the evolution of a color technique in sculpture. Polychrome and realistic sculpture travel on intersecting lines, diverging at that point at which the artist leaves the accidents of nature to interpret form.

AN OUTLINE OF GREEK PRACTICE.

Sculpture during the classic period of Greek art had not the independent existence it enjoys today; to a considerable extent it was a direct accessory to architecture. The history of Greek polychrome sculpture reveals not only the point of contact between two arts, but also their relative positions. It proves architecture throughout the evolution of its orders to be the power instituting conventions and compelling their adoption in sculpture. The purpose of sculpture was subordinate to that of architecture, with the function of contributing beauty to a major scheme; it was not then permissible to regard the edifice in the light of a setting for the sculptor's work.

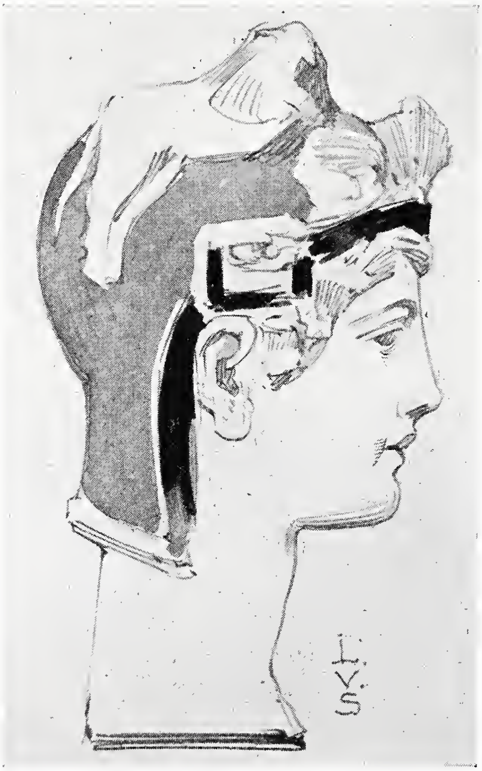
The Greeks attached an extreme importance to the relative capacity of materials for rendering subtleties of plane



POLYCHROME TREATMENT OF EARLY FIGURE AND SEAT IN ACROPOLIS MUSEUM.

and precision of detail. This consideration exercised a direct influence on the development of polychrome treatment and was responsible for the two distinct types into which polychrome sculpture divides itself.

In many districts of Greater Greece a tufaceous stone was used as the principal structural material when wood was discarded for building purposes; it was coarse in texture and did not come up to the requisite standard for rendering delicately carved detail. To obviate this defect stucco and faience were used as revetments for certain architectural items in those districts. Where the human figure had to be carved from this stone, such alternatives were naturally out of the question; the natural coarseness of the material was consequently disguised by the application of pigment, which covered it entirely. The theory that the adoption of this type of polychrome decoration was to a great extent due to dissatisfaction with material is endorsed by a drastic revision in the manner of color treatment as soon as marble, the ideal medium, came into general use. A new spirit in decoration evolved with the advent of marble among the recognized materials. The necessity for color as a cloak or disguise no longer existed; it now fulfilled a new function, emphasizing the natural beauty of this stone, by inlays of delicate ornamentation brilliantly colored.



POLYCHROME HEAD OF ATHENE PARTHENOS. BERLIN MUSEUM.

Architectural precedent was probably responsible for the lack of color variation in the background of sculptured reliefs. A strict convention ruled the application of certain colors to certain sections of buildings; for the field of friezes, metopes and pediments it was decreed that red or blue only should be used. This convention probably influenced the choice of those colors for reliefs which were not parts of buildings.

The palette available for the sculptor was identical with that adopted by the builder. It was composed of colors derived from mineral bases, which were used to the exclusion of all other derivatives on account of their immunity from the action of light. Many of the examples exhumed in our day are very brilliant in color when first exposed to the air, but rapidly lose their intensity and purity through oxidation caused by change of atmospheric conditions, after centuries of burial.

The colors found on sculpture are blue (turned to green), yellow, shades of red, reddish and purplish brown, black, and white. Pigment is invariably applied flat, without any attempt to gradate or break up the tint.

The polychrome pediment sculpture group of Hercules and the Hydra is representative of the color treatment of tufaceous stone. The entire surface of these carvings is covered with pigment; this is always the case in sculpture executed in this material. The colors noted by Lechat are arranged as follows:

Dark Yellow—The body of the Hydra.

Red—The nude parts of the bodies of Hercules and Iolaos; the cuirass of

Hercules; the horse's mane; the interior of the Hydra's jaw.

Black—Quiver and trappings; beard of Hercules; eyebrows, eyelashes and pupils of eyes; markings on the tongue of the Hydra.

Blue—Garment of Iolaos and his hair; this color has now turned green.

White—On globe of eyes of Iolaos only.

Brown—Certain parts of the Hydra, the chariot and the reins.

On the polychrome pediment group of the sixth century B. C., known as the Triple Typhon, the location of the colors, according to Lechat, is as follows:

Red—Men's torsos and faces; scale on serpents arranged in longitudinal stripes, one stripe red between two blue; alternate feathers in Typhon's wings; bodies of lions (light red); bull's tail; interior of its mouth and tongue; streaks of red on body to represent blood drawn by lion's claw.

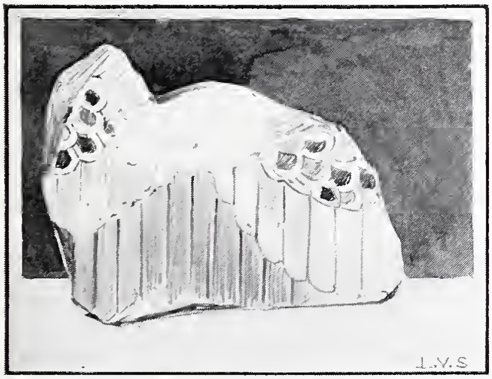
Brown—Rings around nipples; lion's mane (reddish brown).

Black—Eyebrows; edge of eyelids; pupils; spots on bull's muzzle to represent hair; hairs round claws indicated with black lines.

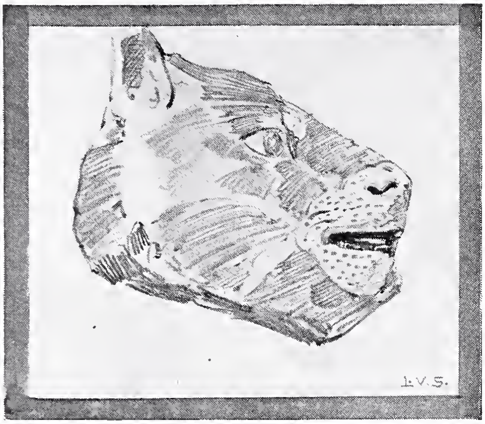
Blue—Beard and hair; iris of eye (now quite green); scales of serpent and feathers, alternating with red; body of bull.

Yellow—Globes of eyes; muzzle of bull; head of Typhon, of pronounced orange tone.

The manner in which the colors are disposed on these two groups is representative of the tufaceous material and the period. The blue beards, etc., are ample evidence to establish the artist's independence of nature as a source of color inspiration.



POLYCHROME TREATMENT OF WINGS.

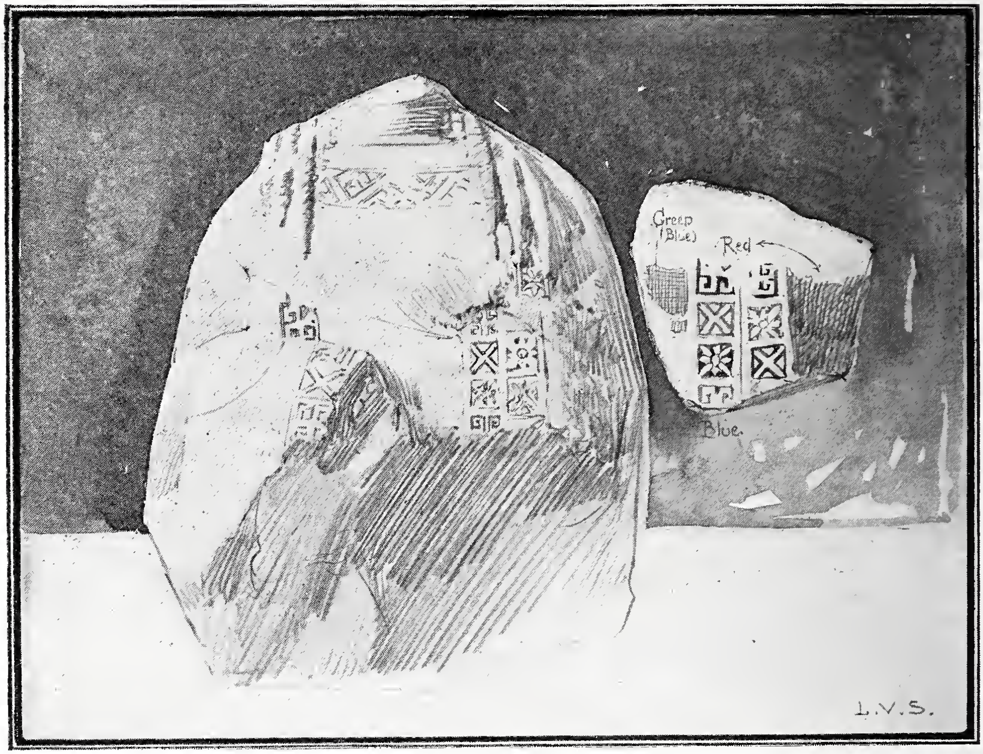


BULL'S HEAD FROM PEDIMENT GROUP. TUFACEOUS STONE WHOLLY COVERED WITH COLOR.

In analyzing the rearrangement or reconstruction of the pediment groups, it would appear that color was located on their various component parts to produce a color arrangement subordinated to that which convention had established on the exterior, distributing the colors in such fashion that the equation of color forces, so admirably adjusted in the façade, would remain undisturbed.

The practical benefit that might accrue to the modern sculptor would probably be derived from a study of special treatment of ornamental detail or of parts of the human figure, such as the hair, mouth, eye, etc., which were contrived especially for the addition of color. There are also useful instances of edge treatment to modify the harshness of bright tints. Where repeating detail is found ornamenting drapery or accessories, its color treatment conforms to the principle laid down in architectural polychrome detail, viz., that repeating detail shall be colored with alternating colors where two tints are used; or where more than two occur, they shall recur in regular sequence.

Suggestion for color treatment gathered in the tufaceous class is more likely



EARLY DRAPED FIGURE DECORATED IN POLYCHROME SHOWING COLOR ALTERNATION IN DECORATIVE BORDERS. ACROPOLIS MUSEUM.

to apply to work executed in glazed clay than to marble, as the necessity for covering the biscuit surface with the glaze corresponds to the original circumstance.

The draped figures found on the Acropolis constitute extremely interesting documents in the history of polychrome sculpture. They date from the sixth century, and mark the transition of decorative treatment resulting from the abandonment of tufaceous stone in favor of marble. These figures reveal the intense delight of the sculptor in a sympathetic medium capable of yielding any subtlety genius could conceive. The quality it possessed was so precious that the interpretation of form and the conception of decorative detail were centred on realizing the full content of this beauty. Where color had been previously used to disguise defects in texture, its function was now to enhance its beauty. In the former case, circumstances ordained that the color scheme should completely cover the surface; in the latter, the substance was so admirable that it constituted a considerable supplement to the beauty of the statue.

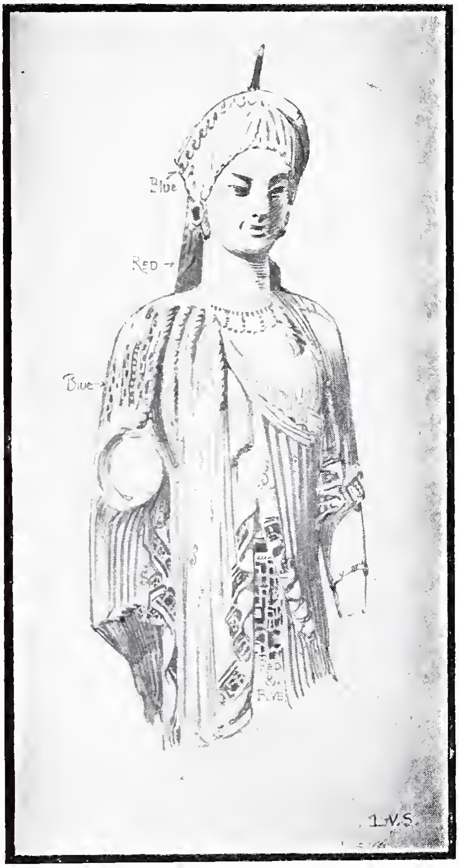
When first exposed to the air the colors recovered by archeological research are in their original condition of brilliancy, but soon tarnish with exposure. The colors were yellow, black and gold, with red and blue predominating. The color illumination occurs on the hair, head-dress and costume. The location of the colors, according to Collignon, is as follows, there being no color on the flesh:

Red—Hair, lips, and in ornamentation on costume.

Black—Eyebrows, eyelashes, pupils of eyes, with a yellow circle round the iris.

Blue—(Now greenish in tone) decorations on head-dress and costume.

Costume—There is no trace of color covering the draperies. It is used solely as decoration to render the effect of embroidered trimming. The only part painted solid is the chiton, and that only where it is almost entirely covered by the himation, in which case the chiton is blue. The ornaments forming a band at the collar and lower edge are in red. The ornamentation is sharply incised, the pattern being traced and filled in with the brush in red and blue.



MARBLE FIGURE, TYPICAL OF POLYCHROME TREATMENT OF THIS MATERIAL. ACROPOLIS MUSEUM.

The intensity of the white marble presented another consideration for the Greeks—the necessity to modify it by some means, to prevent the apparent detachment of the color through the disparity of tone quality which existed between the pigment and the ground.

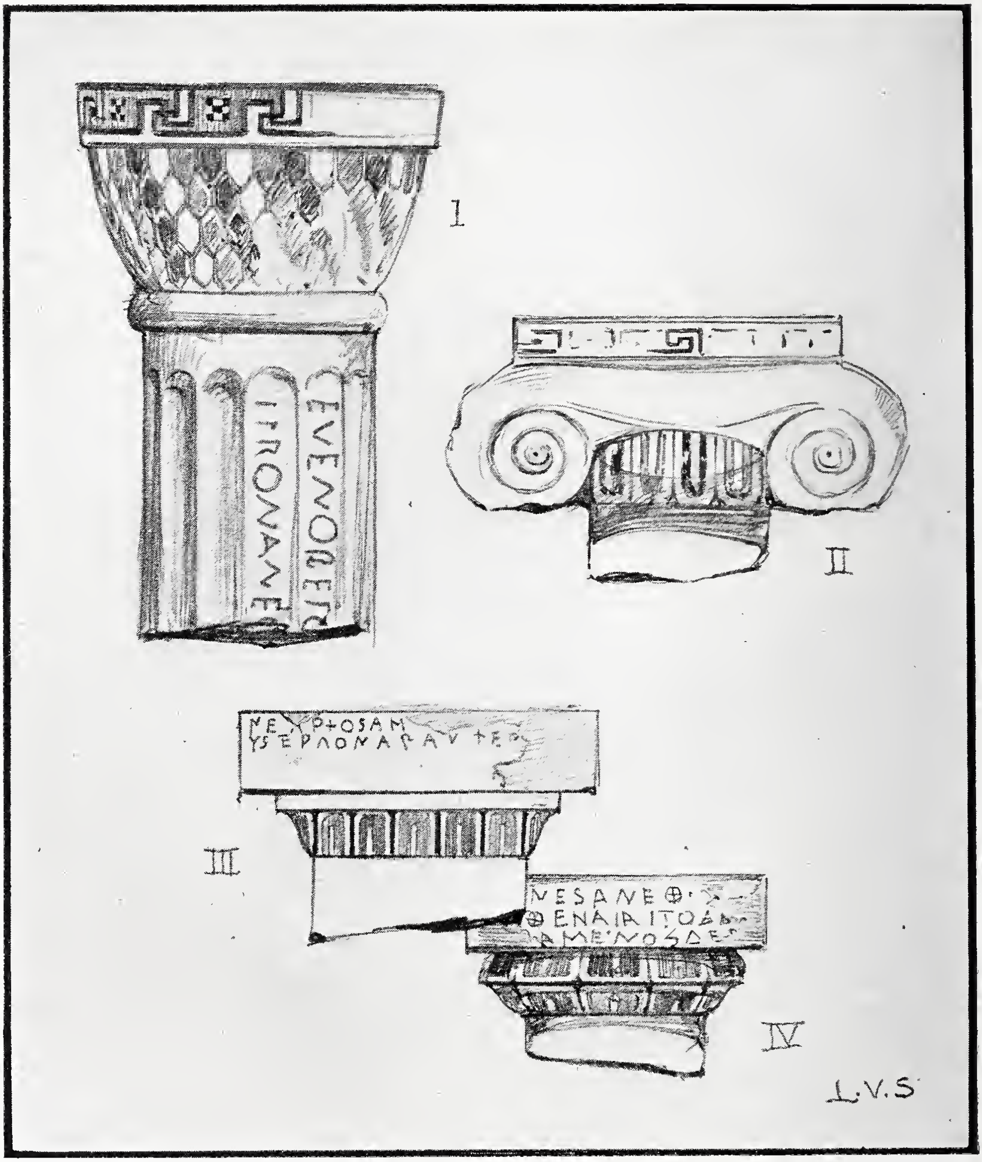
The practice of applying a species of patina over the entire surface was instituted and appears to have been entrusted to the painter as appertaining to his craft. The process is described by Vitruvius. At Delos an inscription has been deciphered, which enters into comparatively minute detail, describing how a coat of wax was spread on the surface of the marble or oil rubbed in to give a warmer tone and to serve as a protective coating for the encaustic color decoration.

To the modern sculptor contemplating polychrome, this accessory effect is one of great importance, as it performs a function relative to that of the varnish on the oil painting, completing the final adjustment of untuned tones. This is one of the instances in which the scientific advancement of our time may serve the artist.

The choice of a suitably composed pigment is also momentous, as the necessity for penetration of the marble by heat will adversely affect any vegetable or madder color. The writer, some years ago, had occasion to experiment with colors, under similar conditions, on other materials and encountered many difficulties. The obstacles were overcome by the fortunate idea to use the powder colors of the china painter. These are not affected by the comparatively low temperature necessary for burning in and could conveniently be mixed with wax, being ground to an impalpable powder. Their color range is very extensive; their tone character is on the order of the pastel, having delicate brilliancy and a velvety appearance.

In figuring out the location of polychrome decoration on sculpture the importance of the pedestal or base must not be overlooked. The illustrations show a few treatments of pedestals for statues. The variety of design is so great that it is hardly possible to make a selection that is in any way typical. No. 1 exhibits an interesting use of three-color decoration on scales, the colors recurring in regular order, probably recalling some similarly detailed accessory to the statue.

It is interesting to note how diametrically opposed to our views were those of



PEDESTALS FOR SCULPTURE TREATED IN POLYCHROME.

I. Pedestal of statue of Evenor.
II. Base of ex-voto found on Acropolis.
III. Base of statue with signature of Anthenor inscribed.
IV. Base of ex-voto dedicated to Athene.

the Greeks, with respect to the manner in which letters and words were to be arranged in inscriptions when used in connection with decoration, sculpture or architecture.

Regularity, alignment and spacing are the first requirements in our standard; but the Greeks, who placed symmetry in the foremost rank of quality, regarded an inscription as a free decoration independent of axis, to be treated with the same spontaneity of spirit as guides the hand of the Japanese artist, when he traces the free-growing spray over a silken panel.

The problem confronting the sculptor who contemplates polychrome decoration, as a feature of his future work, may well be described as abstruse. Color inspiration in painting claims nature for its foundation, its boundary line, even in decoration, resting on probability. Adverse criticism is not to be expected because the painting is to a great extent the counterpart of an object in nature which has obviously provided color data for its execution. The same influence, equally apparent, in a color treatment of sculpture, however, assumes an appearance of realism inconsistent with the major aims of sculpture.

This problem is only for those of the stature and virility of the pioneer; the land is rich, but difficult of access. Principles deduced from the experience of classic times, when this art was inseparably connected with sculpture, provide us with the necessities for its future life. If it is to become an art identified with the American race, it must have other sustenance than the dry roots of archeology.

It may be that progress in this art will depend on the re-establishment of those relations between artist and craftsman which have existed in all ages previous to our own. If the sculptor's work is not to suffer in ornamentation, the distribution and devising of the illumination must be conducted with a skill equal to his own by one specially qualified, as ornamentation and color design need long apprenticeship and a special gift. It might be opportune to recall the Greek legend concerning Praxiteles, who, on being asked which of his works gave him the most complete satisfaction, replied, "Those which Nicias has painted."

LIBRARY—QUEEN'S COLLEGE.

English Architectural Decoration

Text and Measured Drawings by Albert E. Bullock

Part VII.

THE study of ceiling design and plaster work is one of the most engrossing subjects of decoration, the origin of ornamental plastering being very early, emanating chiefly from Italy, where the art attained a high state of perfection during the early years of the fifteenth century.

Ceiling decoration was practiced in Etruscan times and during the Aegean age in Greece—to wit, the tomb of Agamemnon at Mycenae and the beehive tomb at Orchomenos in Boeotia, not to speak of Egyptian and Pompeian decorations. At Rome, the ceiling of a tomb in the Via Latina is an excellent example of geometrical ribwork, with interesting ornament and reliefs based upon ancient legendary subjects.

The palaces of Italy contain work of much magnificence by Giulio Romano and his school. One of his assistants, Francesco Primaticcio, went to the Court of Francis I in 1516 at the age of twenty-six years to assist Il Rosso at Fontainebleau. By the year 1540 much activity in decoration developed in England at Hampton Court Palace, where Lucca Penni was employed by Wolsey and Hans Holbein at St. James's Palace by Henry VIII. Nonsuch Palace was in building at this time and doubtless engaged the attention of the more famous European artists then in England.

During the period of Continental development in plaster wor kthe English productions were of a mediocre nature, and Tudor designs obtained some time after the general adoption of Renaissance principles.

As regards the medium used and the various methods adopted, one has to traverse the history of the craft for the origin of its conception, from Grecian days when the marble temples were covered with a plastic surface upon which a colored decoration was applied, to the Italian sgraffito work of the fifteenth century or the majolica work of Girolamo della Robbia and his school. In sgraffito work a colored ground was applied and upon it a plastic covering was put, which latter was removed to reveal the colored ground beneath in selected patterns, which received some additional modeling. Sgraffito was used both on the exterior and in the interior of buildings.

There is a certain similarity between this method and that adopted in England under the name of stucco-duro, which was practiced at Nonsuch Palace and other sixteenth century mansions. There are examples extant of wattle-and-daub work and of pargeting, which succeeded it, on the exterior of cottages at Wyvenhoe, Essex; Barnstaple, Devon; Ipswich, Suffolk, and elsewhere.

The paneled work at Riddlesden Hall, Keighley, Yorkshire, and that at Wolsey's Closet, Hampton Court Palace, apper to differ from this practice, taking the form of papier maché impressions of molds repeated in alternate array.

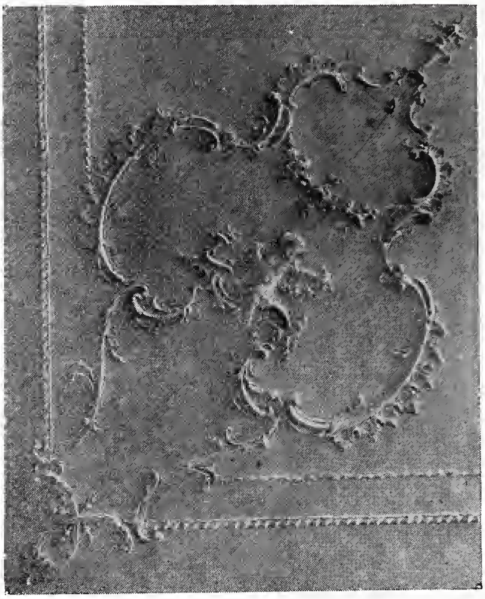
The earlier Jacobean ceilings were, however, of plaster composed of lime, sand and hair, and in design were mostly geometrical, with patterns which were repeated in far-distant districts, indicating the existence of a guild or governed craft operating upon common lines.

During the latter part of the reign of James I and early in that of Charles I, Inigo Jones introduced modeled decoration to ceilings and walls in a form of composition which was applied to salient surfaces. This obtains at Greenwich, Wilton House and other of the larger mansions of the period. In Georgian times, however, the greater projection and undercutting of features necessitated a skeleton framework or building up with hazel twigs and wooden pegs similar to the method used in clay modeling by sculptors. Small reeds and pine sticks with metal wire were frequently resorted to, being used as mediums to this end in order to attach the figures, flowers, birds and fruit to a ceiling surround.

It will be gathered that the labor involved was considerable, remarkable skill being attained, especially in certain ceilings at Dublin and Edinburgh.

With the Chippendale and Adam periods the ceilings became flatter and the necessity of subsidiary assistance to support the weight of heavy plaster forms was thus avoided. It was possible to execute a ceiling or wall decoration more quickly and at less cost, in consequence of which the art was more universally adopted.

The treatment of ceilings is essentially a matter of relative style between that of the walls and the ceiling. There is to my mind nothing more disappointing than a fine room with an inappropriate ceiling out of harmony with its environment, or no ceiling at all. There are, unfortunately, too many period rooms in England, where the lack of suitable ceiling ornament is the one note of incompleteness which renders the apartment in this respect a failure. One would, however, prefer it thus, rather than be tortured with a composition which is in bad taste and perhaps equally badly modeled.


ANGLE OF CEILING FROM THE MAYORALTY BANQUETING ROOM OF THE "OLD CIVET CAT," EXETER, 1759. NOW OWNED BY CHARLES ROSS, ESQ.

What enhances the best period rooms is the harmony of paneling with ceiling; next to which a good parquet floor or surround to the carpet is the final expression of completeness from the point of view of structural decoration. The furniture, hangings and lighting arrangements should correspond in style, to give an effective finish.

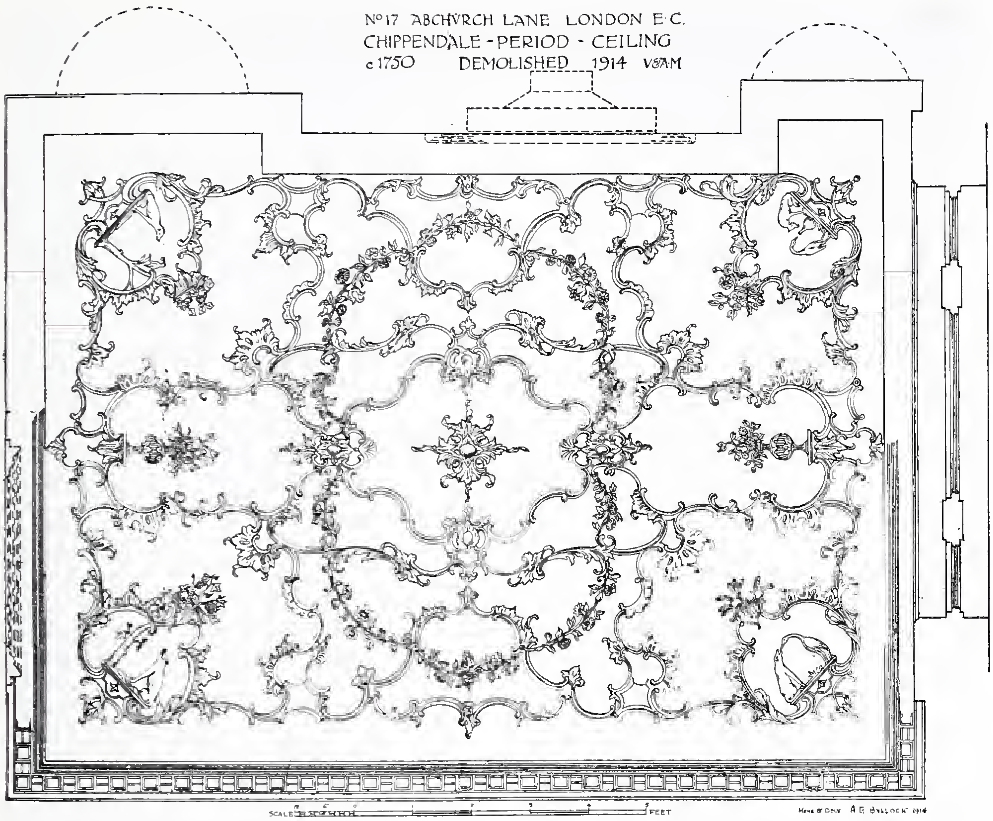
As to the method of hanging curtains, the rods supporting these should rightly be concealed behind the architrave of the window, and the blind roll should likewise have its own boxing, and thus combine with other elements to please the eye.

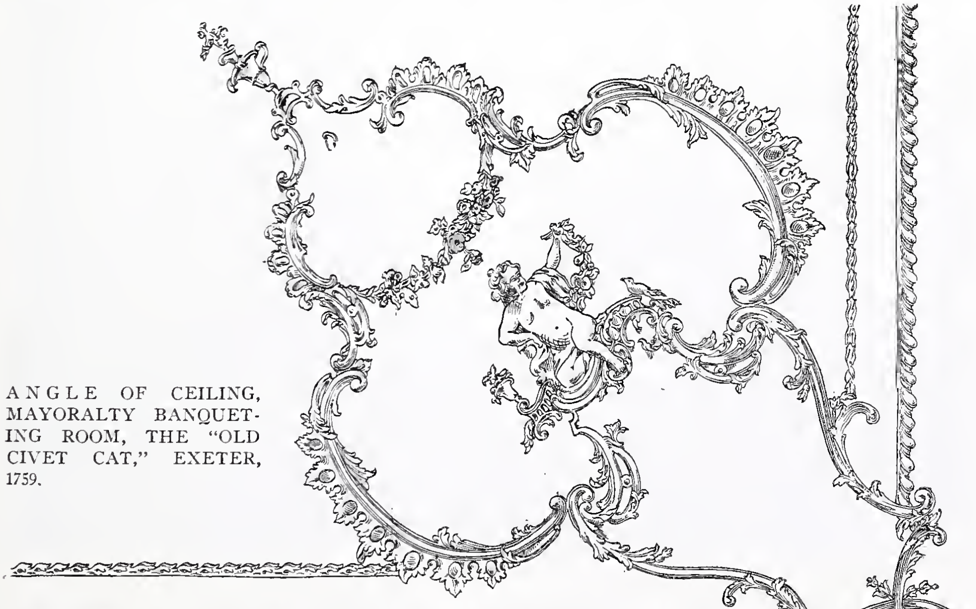
Moreover, the theme of decoration should embrace certain similar motifs in the design of the ornament both on walls and ceiling and, if practicable, in the furniture and hangings, which at once indicates that the composition was the result of one mind and not a series of chaotic inspirations emanating from different sources. If these principles are observed one is more than half way on the road to success in the achievement of a satisfactory combination.

I say more than half way advisedly, because the desired goal is chiefly dependent upon the design chosen and is not infrequently due to accidental or unconscious individualism of the artist employed. Take, for instance, more modern work than of the periods already dealt with, as that of the late Alfred Stevens at South Kensington Museum and at Deysbury, near Liverpool. In the former case he worked in combination with fellow artists, and the result is a confusion of ideas, although each individual effort, taken apart, may be admirable. Directly he is given a free hand the untrammeled genius of the man asserts itself and he produces a lasting work of art.

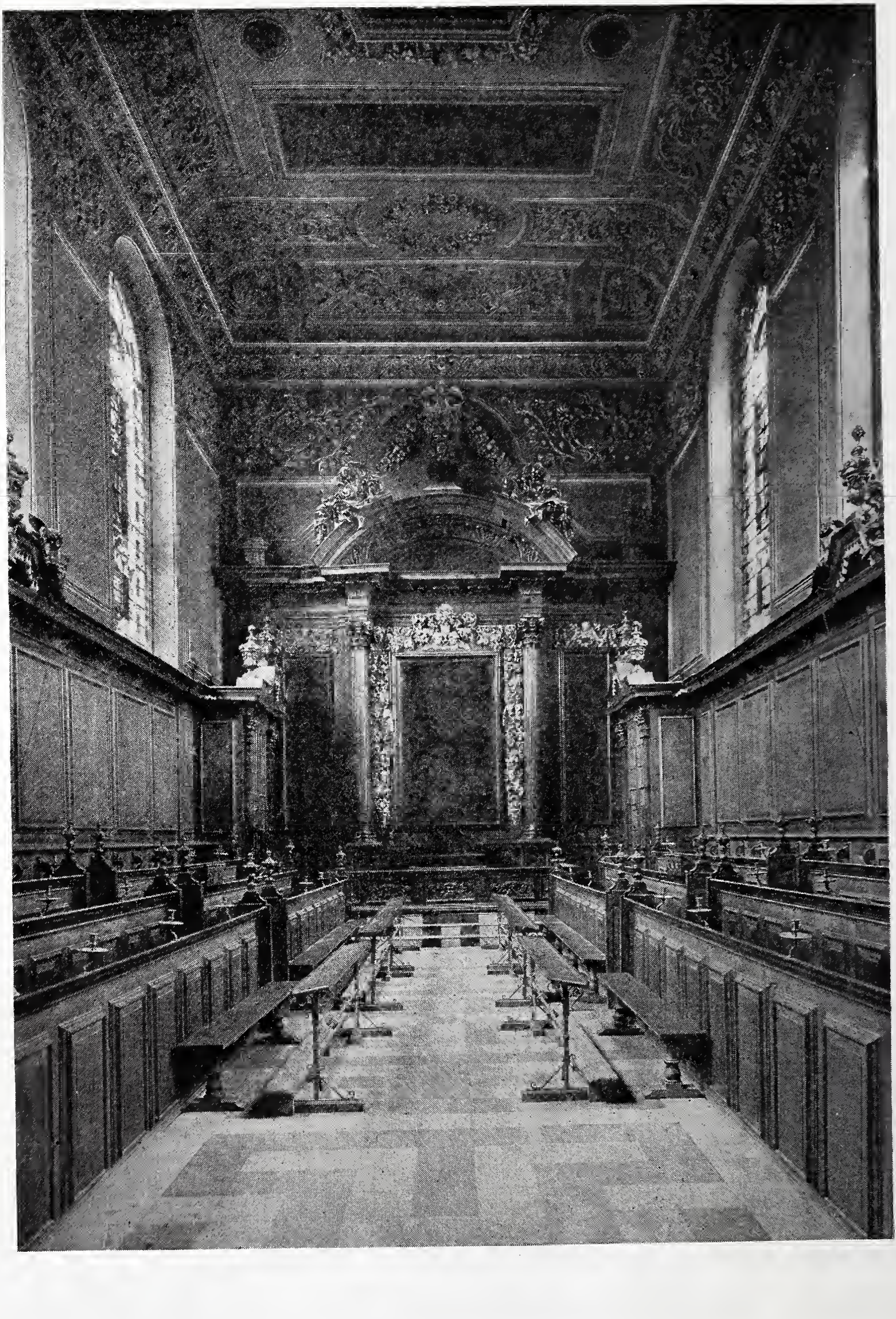
It will be seen how essential it is to start with a scheme having a rhythmic movement throughout. This was, I firmly believe, the main principle which governed the early designers whose works are now treasured and admired.

For this reason I have a rooted ob-

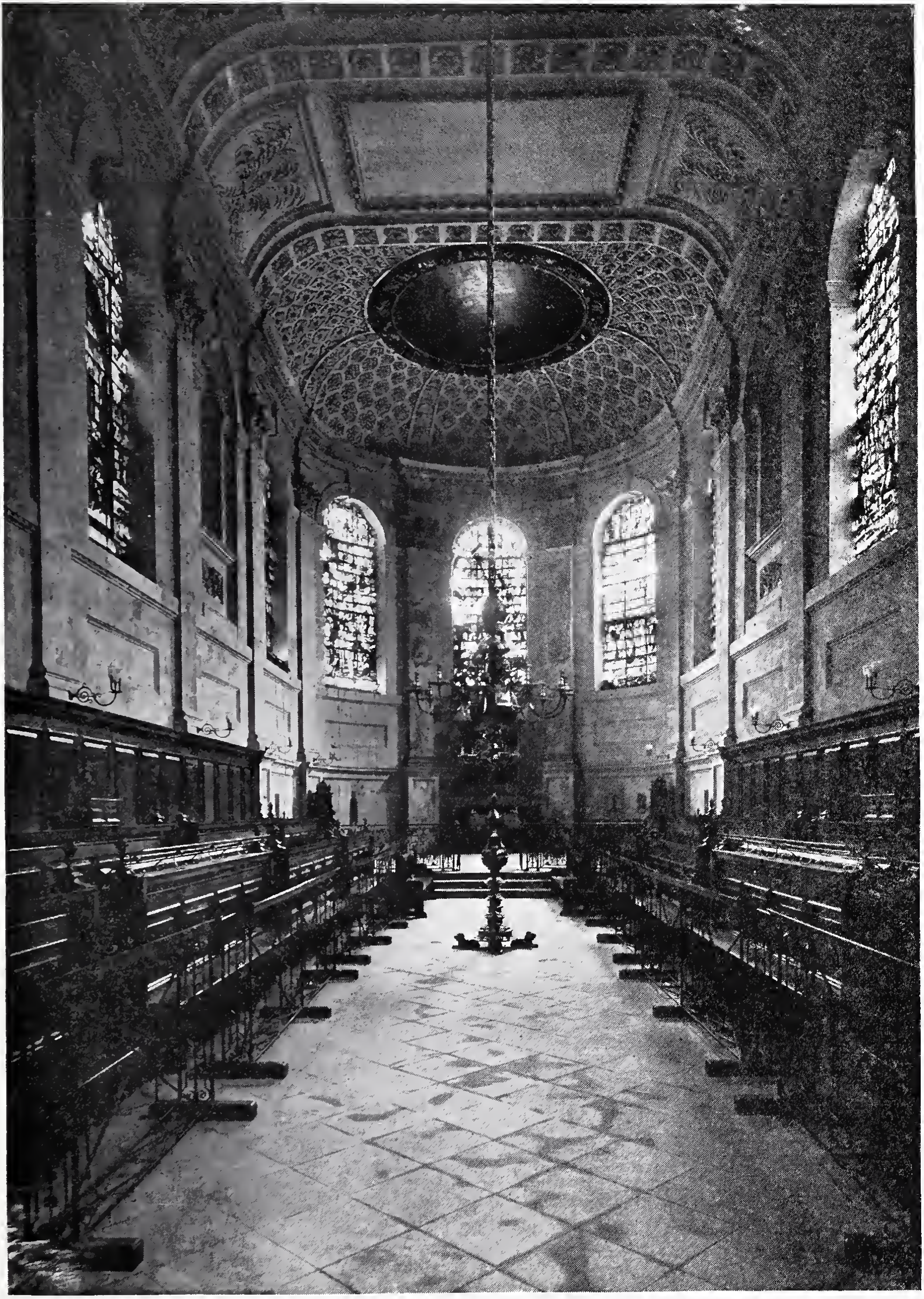

Nº17 ABCHVRCH LANE LONDON E·C.
CHIPPENDALE - PERIOD - CEILING
c1750 DEMOLISHED 1914 V&AM
SCALE 12 6 0 1 2 3 4 5 FEET
Mens & Delt A G Bullock 1914



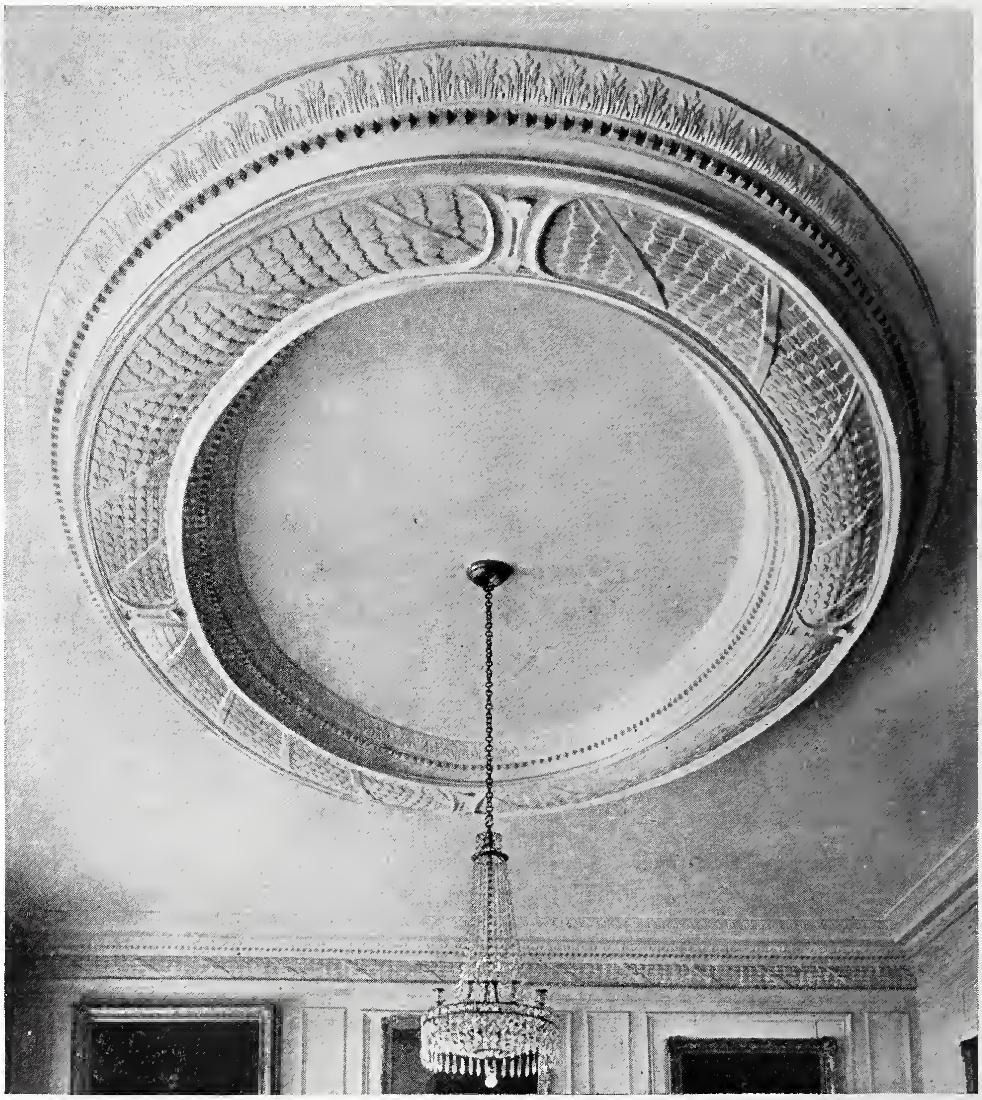
ANGLE OF CEILING, MAYORALTY BANQUETING ROOM, THE "OLD CIVET CAT," EXETER, 1759.



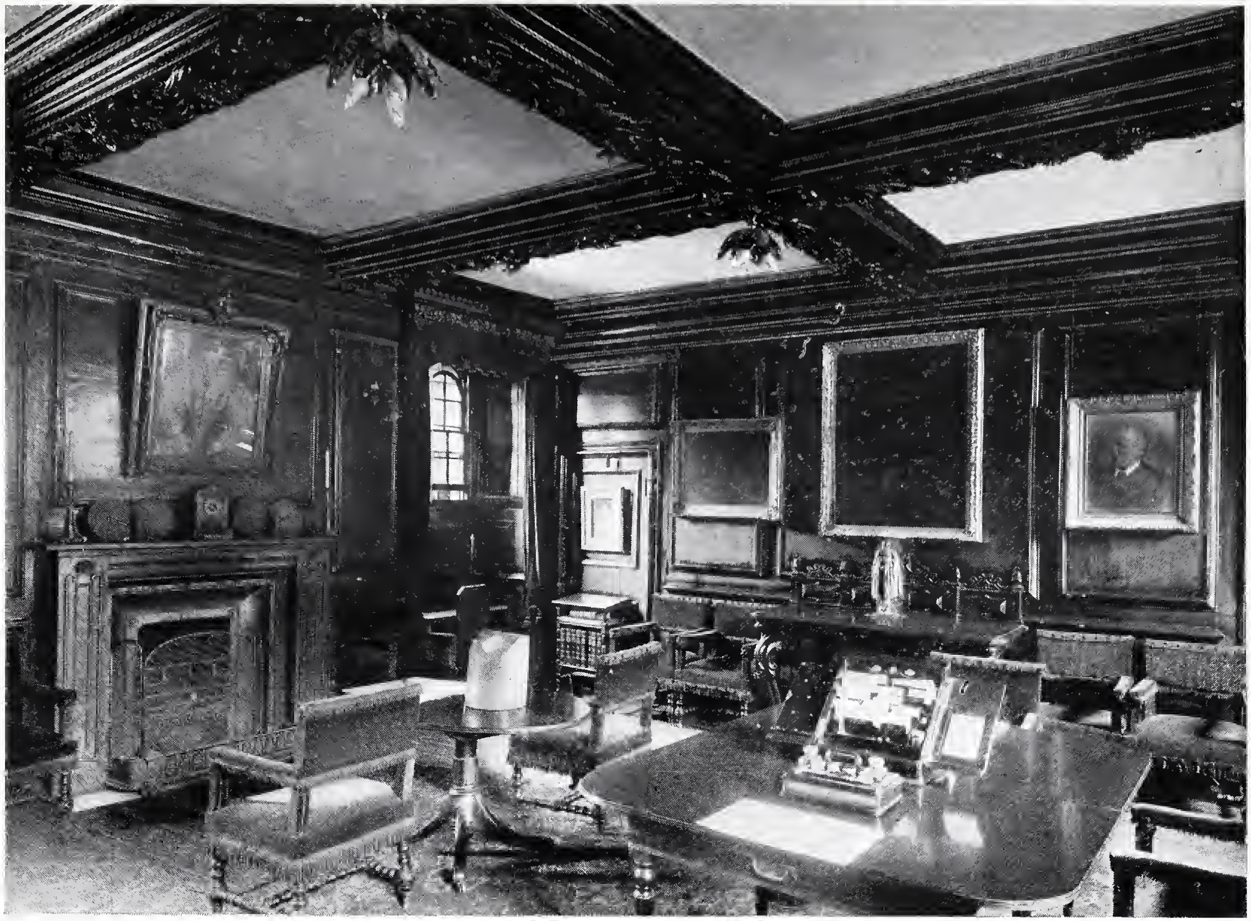
TRINITY CHAPEL.



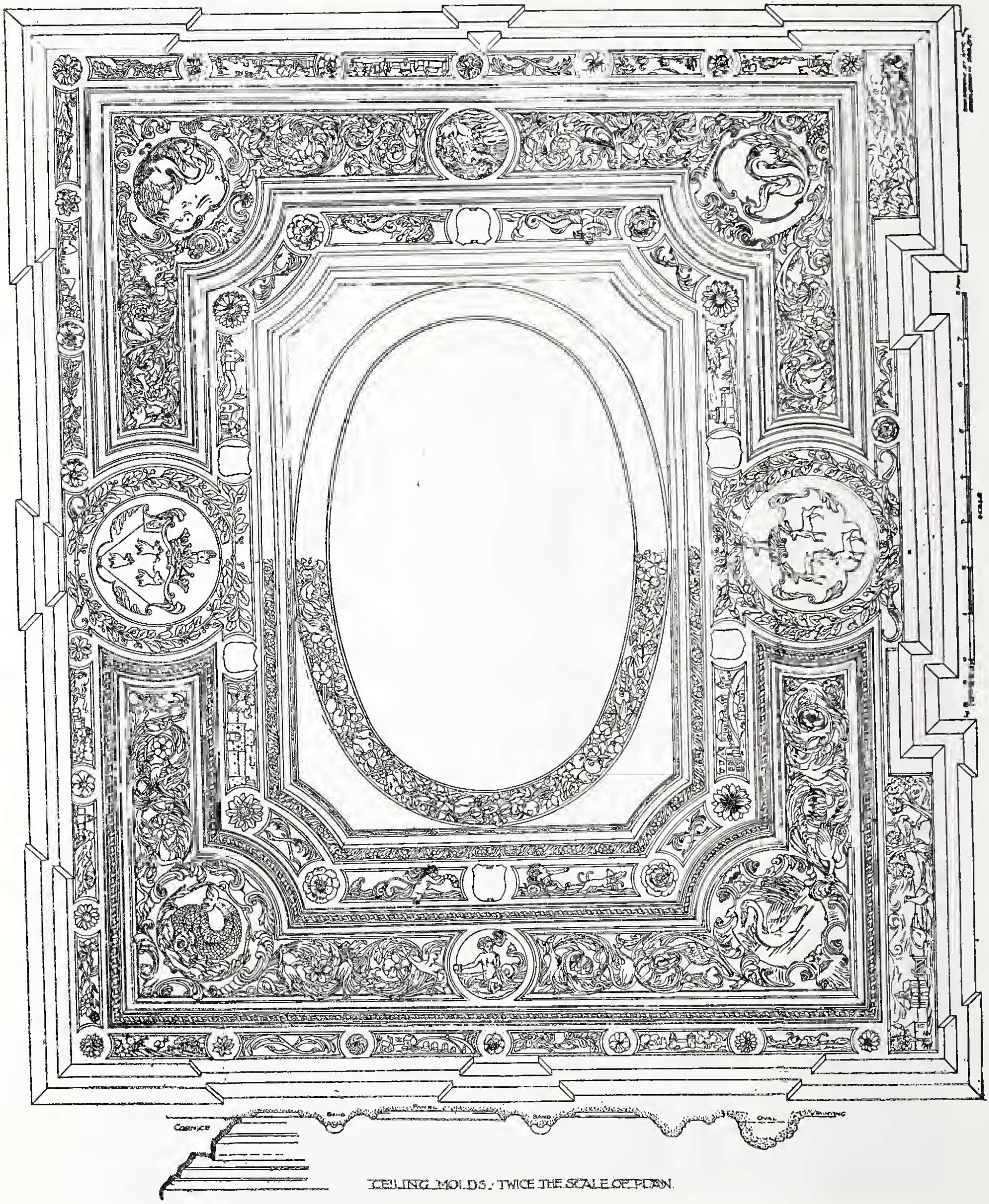
QUEEN'S CHAPEL.



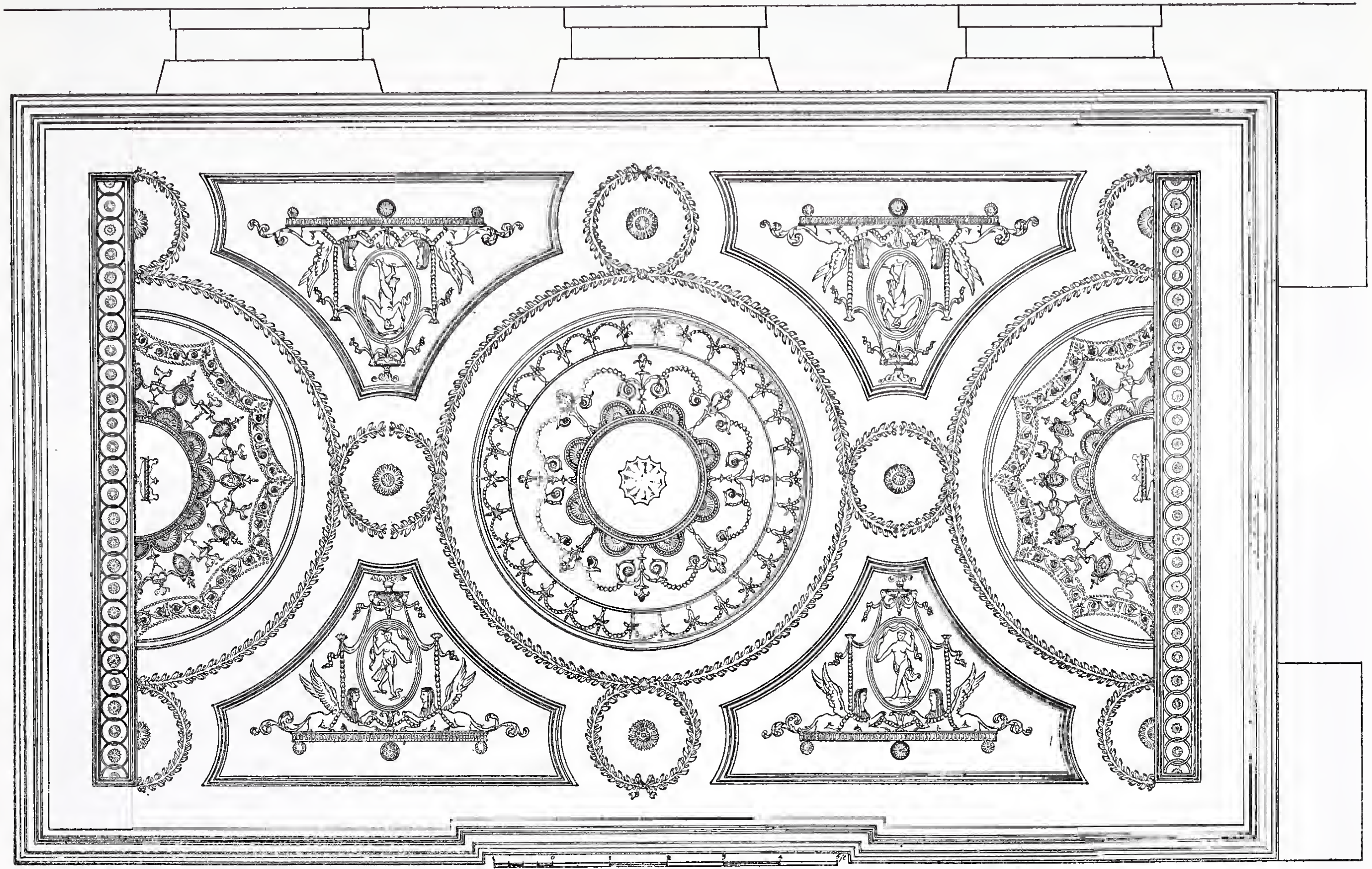
DRAWING ROOM CEILING—
BRYMPTON D'EVERCY, SOMERSET.



COMMONS ROOM—JESUS COLLEGE.

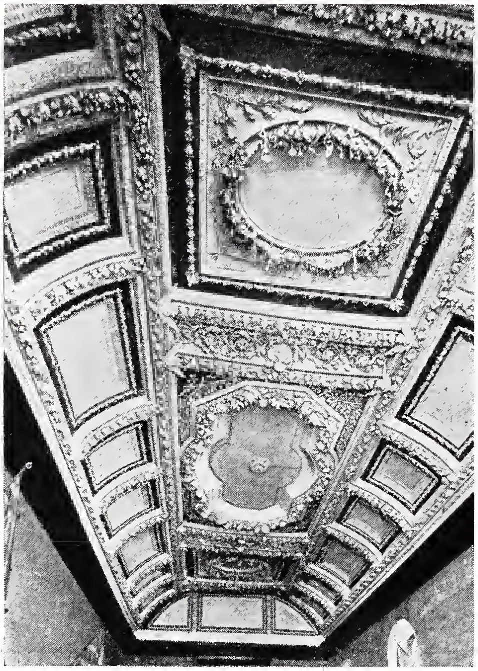


From a Drawing by
T. Frank Green.

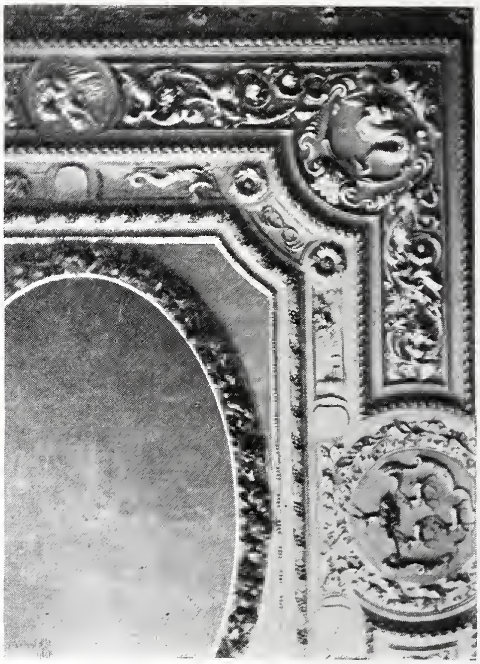


Nº 14 DERING Sт. W. CEILING c 1771

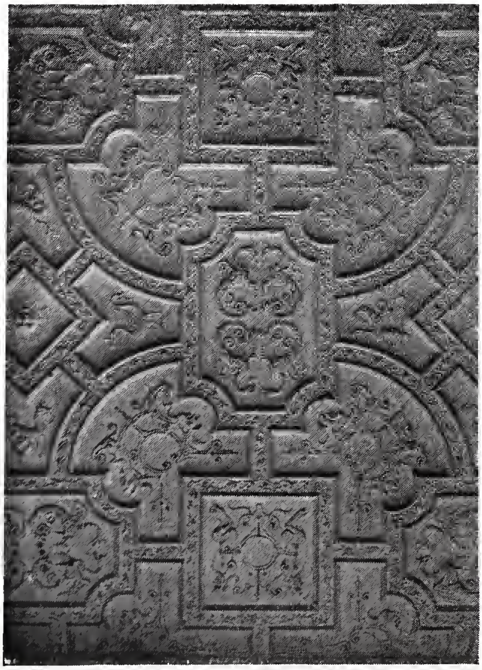
Mens et Delt A.E. Bullock 1912



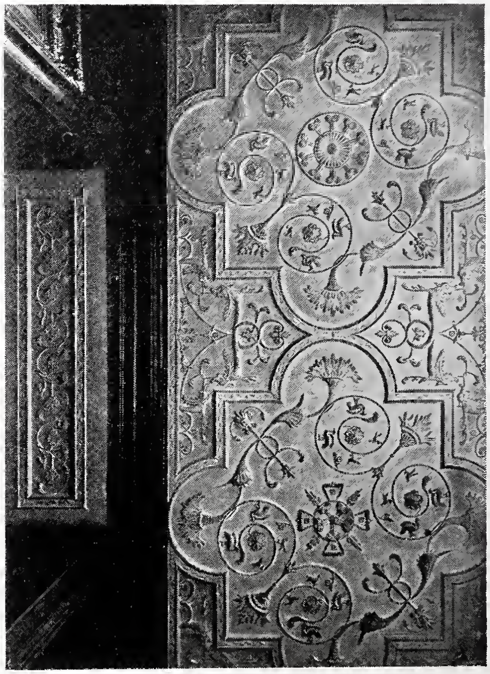
CEILING OF CHAPEL, ROYAL MILITARY HOSPITAL, KILMAINHAM, IRELAND, 1680.



CEILING IN BOARD ROOM, NEW RIVER COMPANY'S OFFICES, LONDON.



CEILING IN LADY HOYT'S DRAWING ROOM.



LONG GALLERY, END BAY.

jection to museums which house isolated examples of art shorn from their original surroundings—in a foreign atmosphere—and often placed in juxtaposition to another object at once equally at variance with both its surroundings and its neighbor. Picked of its paint, robbed of its hue, what is left beyond the bare joiner's work?

Perhaps it has advantages for the student who studies detail; but what can he know of the complete scheme, or how can he solve the riddle of the principles which governed the motives of the original artist?

A good work is likened unto a fugue, having a subject which is gradually developed until its completeness so satisfies the eye that the beholder finally leaves the apartment with a sigh of satisfaction at the genius displayed. Such work is not impossible today; it is the result of the expression of skill and genius, and there are many examples extant, both in France and the British Isles, which attain to this degree of perfection.

Owing to the different character of the materials employed in ceilings and walls it is not always practicable to repeat motifs on both areas, nor was it always done; but where this was so, the main lines frequently carry round or have some relative or proportionate value to the other media.

Early Jacobean work in England was somewhat clumsy; although many interesting geometrically ribbed forms were practiced, of which perhaps the several examples at Knole, Kent, are among the most interesting. Next come the Charles I examples, as at the Customs House, Exeter; The Pynes, Devon, and many examples by Inigo Jones, as at Coleshill, Raynham, etc.

At Ashburnham House, Westminster, a somewhat later period is represented in the library ceiling; while the drawing room retains the heavy cornice treatment common to the work of Inigo Jones at the Queen's House, Greenwich, and elsewhere.

The Wren era comprised the period embracing the reigns of Charles II, William and Mary, and Queen Anne, of which some of the most interesting examples are those executed during the reign of the two brothers, Charles and James, consequent upon the fire of London, and the many new churches and larger mansions which were then erected. Wren's work at Belton and Hampton Court Palace and Talman's work at Chatsworth were of this period. Wren's later work at Hampton Court Palace for William and Mary and the board room of the New River Company at their offices in Rosebery avenue, London, were contemporary. Illustrations from these examples have been given in former articles, including the ceiling from the Ward School, Love Lane, reputed to have once been in the occupation of Sir Christopher Wren.

The example cited in a former article as from Clare Market of the date 1670 is an heretical instance of no distinct style and is very probably of a much later date than that given by the authorities of the Victoria and Albert Museum.

Hawksmoor and Payne practiced a debased art in decoration, with plaster-enriched scrolls to picture-framings on walls, until James Gibbs exhibited much taste in work at the Radcliffe Library, Oxford, and some smaller houses largely based upon classic lines and executed by Artari, who often worked with his colleague, Bagutti, on the decorations designed by Gibbs. About this time a style based upon French design, coinciding with the work of Chippendale, was largely developed by contemporaries of Sir William Chambers. The style referred to will be illustrated in the next article by various details from chimney-pieces and ceilings. It attained great freedom of execution and offers possibilities of future expansion in advance of any other of the set styles described. This was founded upon the scroll designs of the French metal workers under Boulle, and was adapted to furniture, ceilings, mantels, and cast-iron chimney backs to dog grates, etc.

Two examples are here given from Exeter and Abchurch Lane, London, illustrating the freedom of design and execution of this style.

Under the auspices of Lord Burlington a new school arose for developing the purer classical lines, with Colin Campbell, William Kent, Archer, Ripley and Wakefield, and the more pronounced exception of the work of Leoni at Moor Park, which is in distinctly rococo style. Kent favored a revival of the work of Inigo Jones, and actually reproduced much of his detail at the Treasury Offices, Whitehall; while Holkham Hall represents a studied example, which was produced by the combined efforts of the school with a view to producing a building of palatial magnificence of an entirely original character.

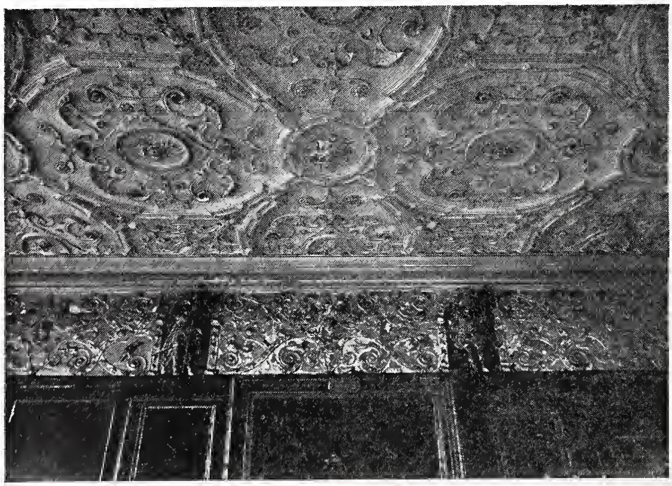
During this period it was natural that previously developed detail should creep into the design; hence, ceilings often represented a classical basis of design in the groundwork of the panels, with modeling of French motifs.

Seeing the confusion to which the art had attained, the Brothers Adams evolved a new and original style known by their name, which for lightness and grace will go down to posterity as unique.

The combination of delicate Wedgwood cameo with painted panels by Angela Kaufmann and Antonio Zucci was a happy blending which found much favor for state rooms and libraries where a light decoration was desired. But, as has been previously stated, the depth of the authors failed to maintain the purity of the detail and repetition of ornament eventually killed the style.

Thereupon a return to the classical was again attempted in work by Sir John Soane and his pupils; but for the most part they strove after features which lacked the essential elements of originality and waned in due course. Since then the older styles have been repeated by George Devey and his immediate followers, each bringing in certain eccentricities of personal predilection, which failed to hold public appreciation.

Decoration, therefore, has in most instances lapsed into a system of copying periods more or less suitable to the furniture chosen, or vice versa, and there is as yet no light thrown upon the trend of future events. Certain it is that set repetition fails utterly to satisfy this want—an original unfettered art is needed, which will alone survive this time of stagnation, and we await such expression as may yet charm the minds of those who seek for the beautiful in the art of the plasterer and of the artist in decoration.



FRIEZE IN GREAT DRAWING ROOM, ASTON HALL, 1608.

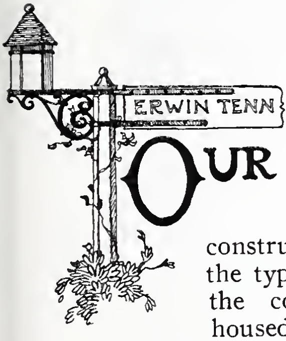
·INDVSTRIAL· HOVSING·DEVELOPMENTS ·IN·AMERICA·

By LAWRENCE VEILLER

Secretary of the National Housing Association

PART IV · A COLONY IN THE BLUE RIDGE MOUNTAINS *at* ERWIN, TENN.

Grosvenor Atterbury, Architect and Town Planner



OUR usual association with the housing of railroad employees engaged in construction and repair work is the typical labor camp in which the construction gangs are housed, consisting as a rule of old freight cars, with the wheels taken off, set upon the ground and used as bunk houses.

We do not instinctively associate with the housing of railroad employees a Garden Village or model town.

It has remained for a southern railroad, the Carolina, Clinchfield and Ohio Railroad, to set an interesting example in this respect. Down in the Blue Ridge Mountains at Erwin, Tenn., this railway winds leisurely through attractive hill country rich in minerals. Here sheltered in a very beautiful table-land enclosed by high hills on three sides is a little settlement, in which the railroad has established important machine shops. Up to two years ago this settlement had reached a population of about 3,000, a considerable growth in the ten years since the railroad came through. Two years ago it was like a thousand other country villages, of hit or miss construction, with architecture of a nondescript character and with nothing to attract one's attention to it or differentiate it from hundreds like it.

In the Summer of 1916, some of the men financially interested in this railroad, wishing to develop the town along fundamentally sound lines and to provide for the increased growth which they foresaw, called into consultation Mr. Grosvenor Atterbury, the New York architect, and invited him to visit Erwin and make recommendations to them as to the type of development that could be given to the town. The result of this visit of Mr. Atterbury is a new Garden Village now springing into existence. It required a good deal of vision for a little community like this, tucked away in the mountains of Tennessee, without even a "cattle law" to keep the cows off the public streets, to see the advantages and possibilities in well-ordered development along modern town planning lines, but these gentlemen had it and this is what has come to pass. Already an area which will eventually take care of 30,000 or 40,000 has been laid out.

The problem which confronted Mr. Atterbury presented many interesting questions. In the first place he did not have completely new territory to work with. The fundamental lines of the community had already been established and much of the property was unavailable for the right kind of development, being adversely held by other owners. Notwithstanding this, as will be seen by reference to

THE COUNTRY ROUND ABOUT ERWIN.

the general plan shown on page 549, Mr. Atterbury has with much ingenuity and skill worked out an extremely interesting treatment, substituting for the commonplace and unimaginative gridiron plan, with which the community had started, an attractive, modern and scientific layout along modern town planning lines, with curving streets and irregular shaped lots, combining variety of treatment and harmony of design throughout.

As a result of considerable practical experience, the curved streets have been used principally for long, sweeping boulevards and driveways and such have been avoided in the short residential streets and lanes.

The kind of variety and interest that is obtained by curving streets is not essential in the short, narrow streets where the vista is closed within a block or so.

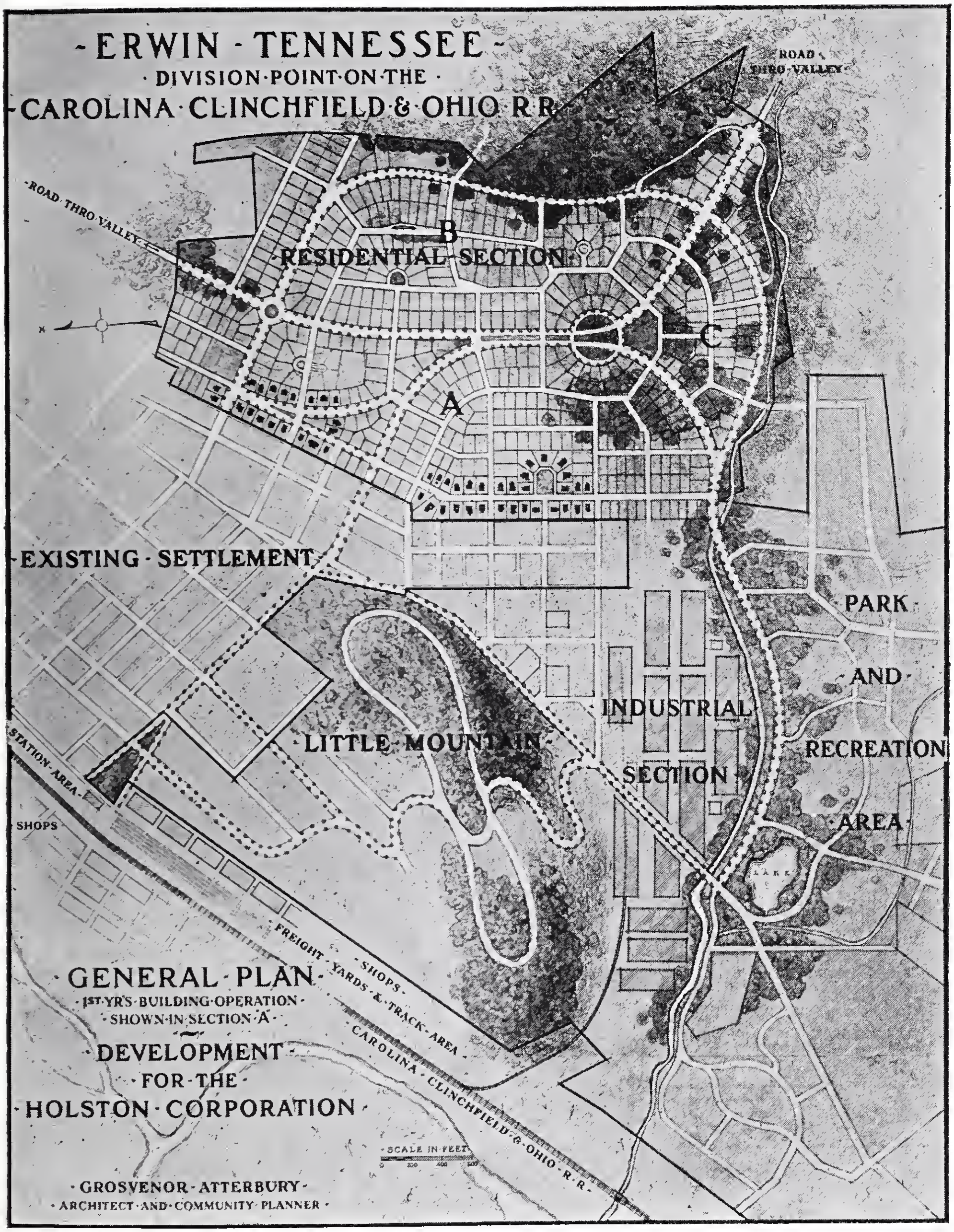
The tendency in many of the new developments is to over-exaggerate and misplace the curvilinear element, forgetting that where the radius is short, as is necessarily the case in short streets, the lotting problem, and consequently the building problem, is enormously complicated and considerably increased in cost by irregular and curved plots. On the other hand where, as in this case, the curves are confined to the larger thoroughfares which have greater sweeps, with correspondingly greater curves, this practical objection in the lotting and building is largely avoided.

These practical considerations have influenced the layout of Erwin, as will be seen from the accompanying plans. Of course, the topography of the site is also contributive in this respect.

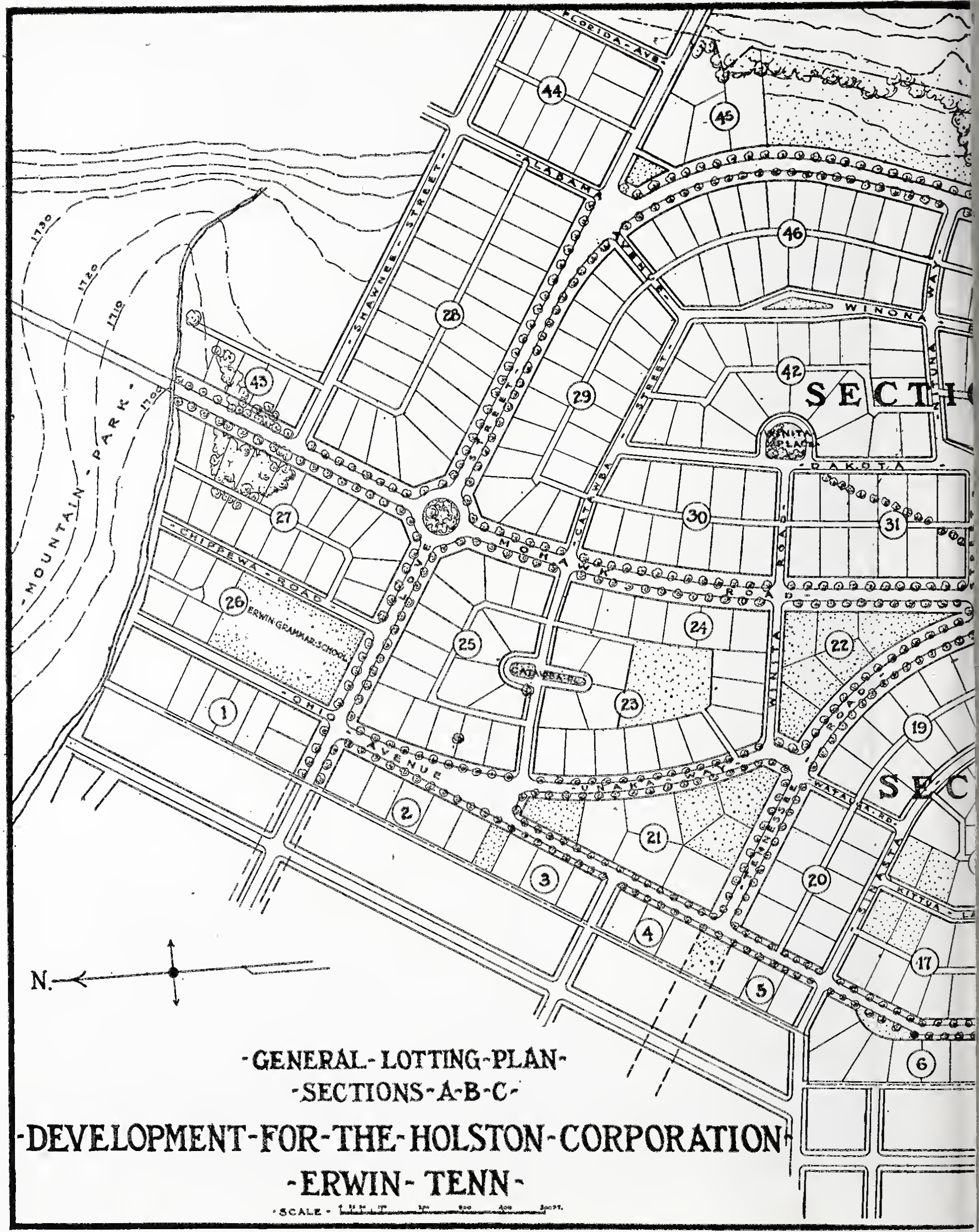
The system of main boulevards was laid out to satisfy the demands of future travel from the three valleys opening out from the town site. The reservation and use of a stream as a parkway along the greater part of the boulevard, which makes a circuit of the town, will preserve a very beautiful, natural feature and supply a large park area for the future town.

At the beginning it was the plan of the company to sell the property in undeveloped lots as rapidly as possible. As a result of Mr. Atterbury's work, the owners reversed their original policy after the new development was started and said that it would not do to spoil the proposition by selling unimproved lots—at least until such time as the entire development had been given a start and an example set for its future extension.

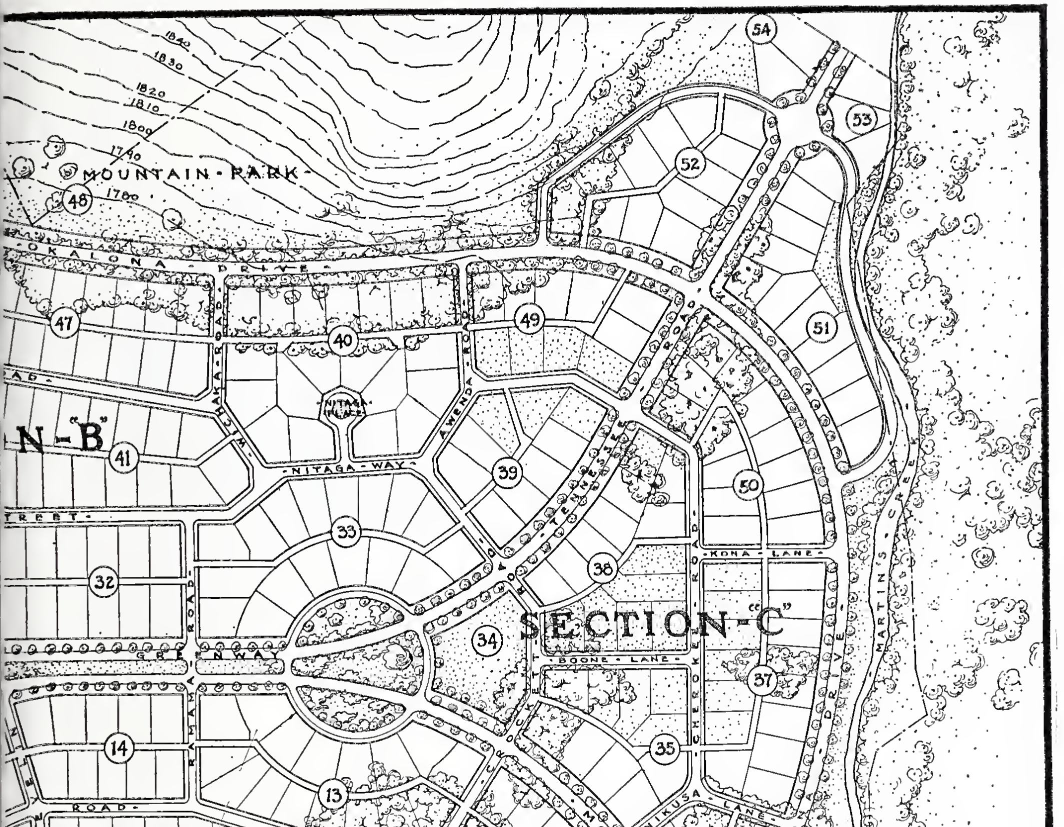
It is an interesting commentary upon the wisdom of controlled development upon a carefully thought-out plan that, from at first viewing the idea of any restrictions at all with much hesitancy,



GENERAL PLAN OF
THE DEVELOPMENT.



-GENERAL-LOTTING-PLAN-
-SECTIONS-A-B-C-
-DEVELOPMENT-FOR-THE-HOLSTON-CORPORATION-
-ERWIN-TENN-
-SCALE-


MOUNTAIN · PARK
1840
1830
1820
1810
1800
1790
1780
OKALONA · DRIVE
SECTION "C"
N · "B"
TION · "A"
NITAGA PLACE
NITAGA · WAY
AWENDA ROAD
MICHAMA ROAD
RAMAMA ROAD
GREENWAY
STREET
ROAD
TENNESSEE
CROCKETT ROAD
MOHAWK ROAD
CHEROKEE ROAD
KONA · LANE
BOONE · LANE
ANIKUSA · LANE
OKALONA · DRIVE
MARTIN'S CREEK
ONEEGA · LANE
WAPIKA · PLACE
TWIGA WAY
MARTINS STREET
HOLSTON PLACE
AVENUE
54
53
52
51
50
49
48
47
41
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39
38
37
36
35
34
33
32
15
14
13
12
11
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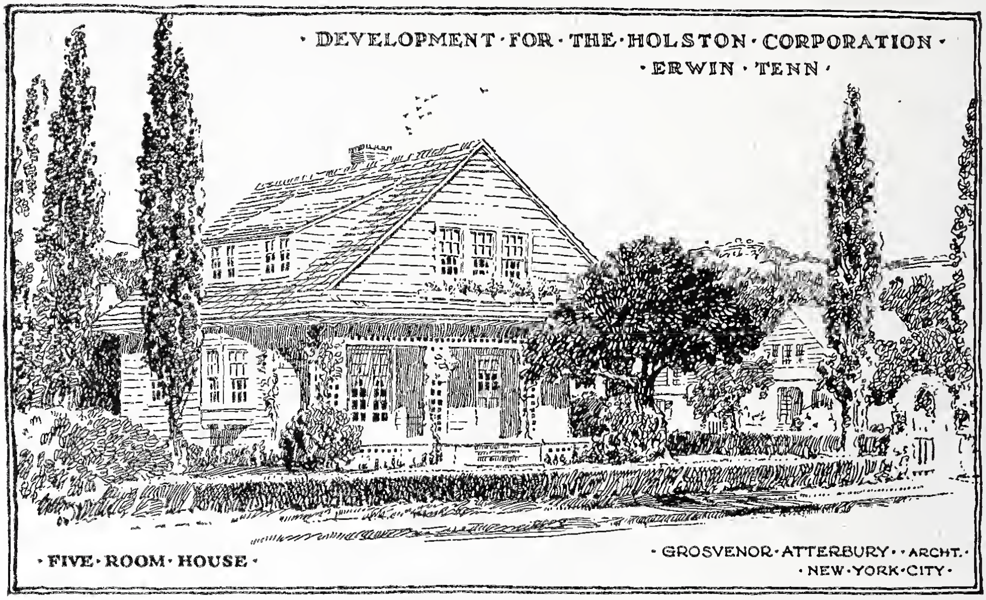
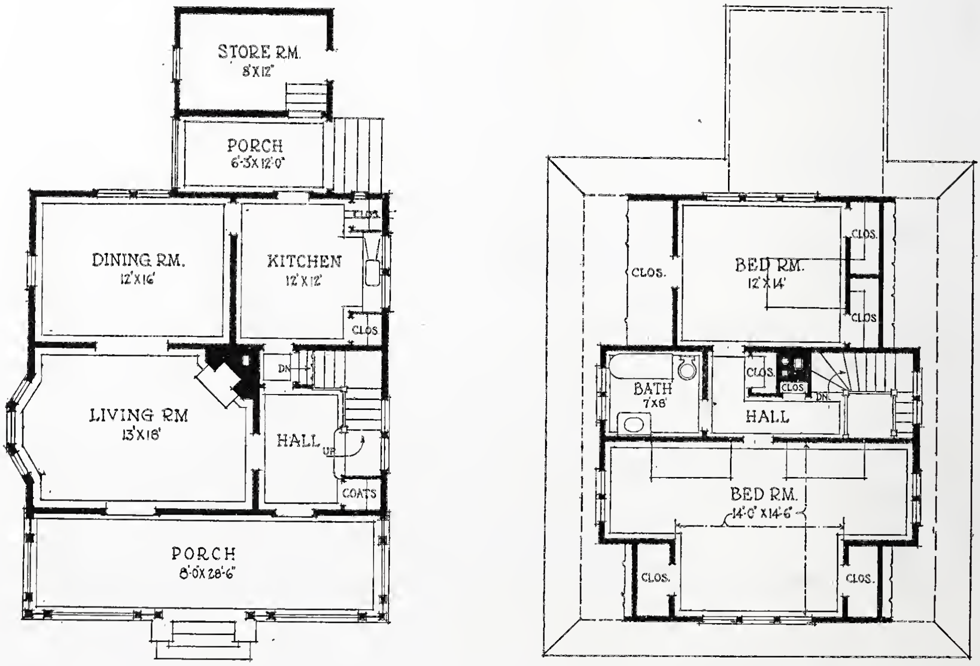
9
16
16A
16B
7
8
8A
8B
· GROSVENOR · ATTERBURY · ARCHITECT · AND · COMMUNITY · PLANNER ·
· 20 · WEST · 43RD · STREET · NEW · YORK · CITY ·

PLOT PLAN.

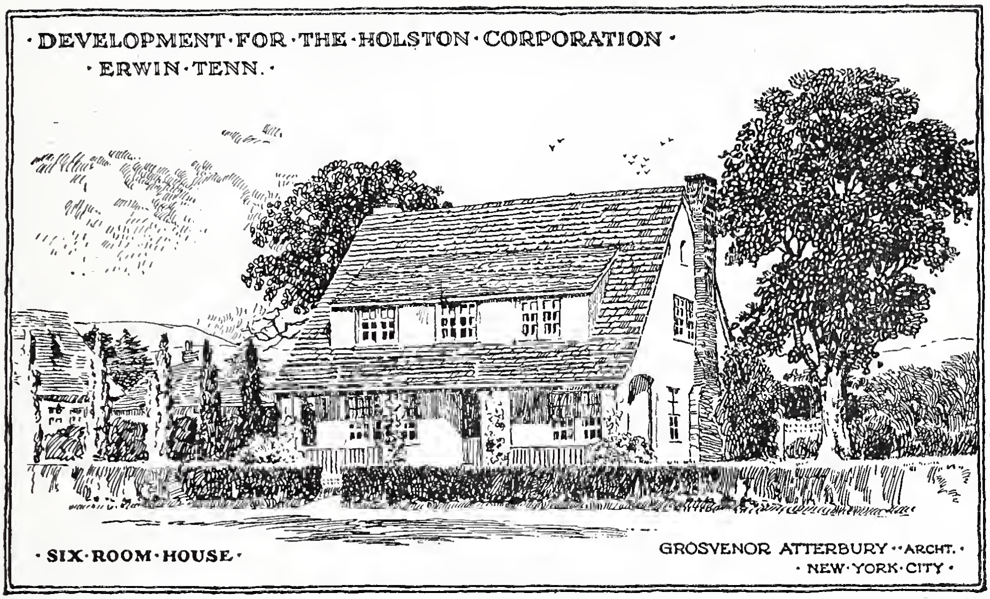

· DEVELOPMENT · FOR · THE · HOLSTON · CORPORATION ·
· ERWIN · TENN ·
· FIVE · ROOM · HOUSE ·
· GROSVENOR · ATTERBURY · · ARCHT. ·
· NEW · YORK · CITY ·



· FIRST · FLOOR · PLAN ·

· SECOND · FLOOR · PLAN ·

THE FIVE-ROOM HOUSES.


· DEVELOPMENT · FOR · THE · HOLSTON · CORPORATION ·
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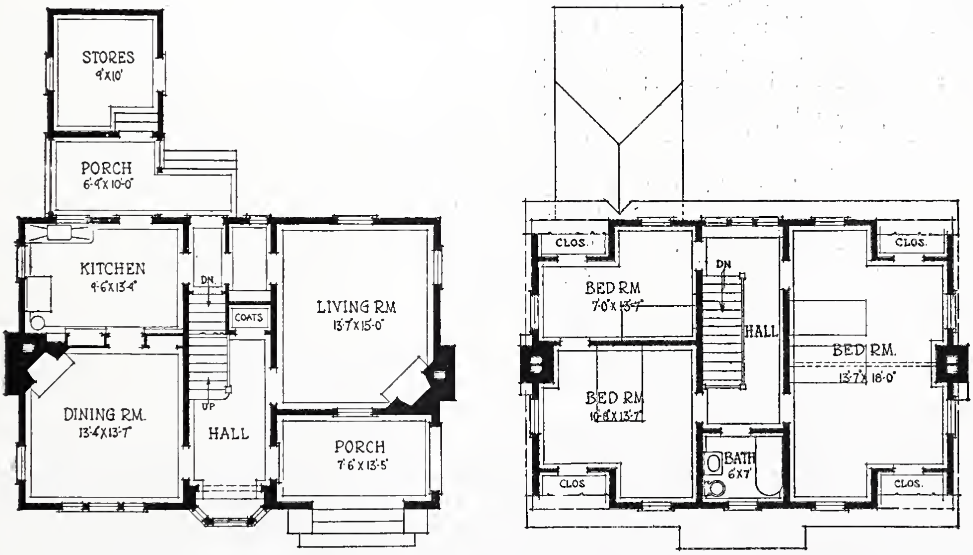
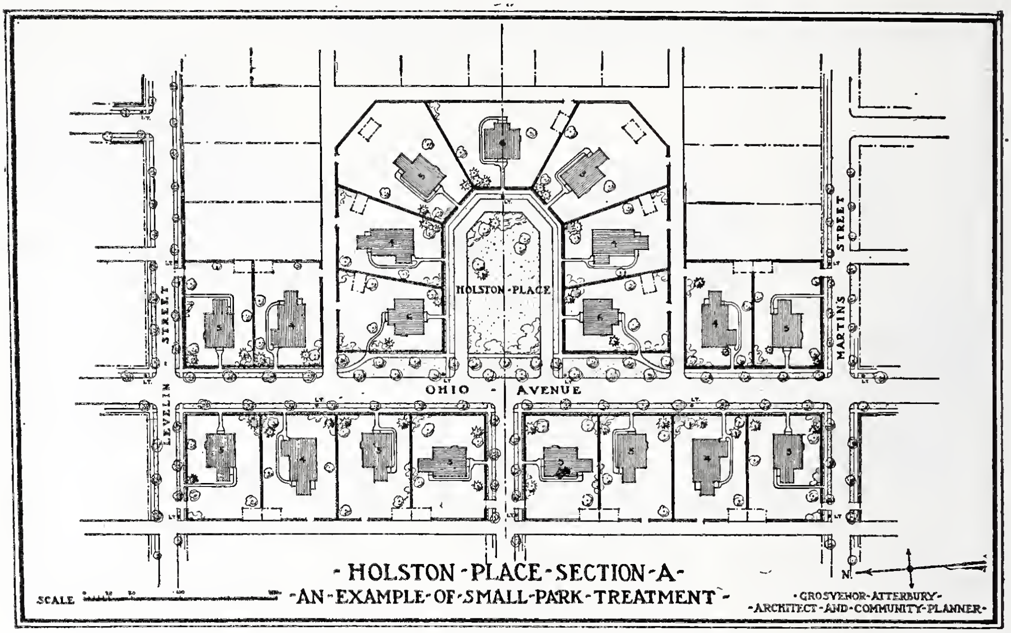
· SIX · ROOM · HOUSE ·
GROSVENOR ATTERBURY ·· ARCHT. ·
· NEW · YORK · CITY ·



· FIRST · FLOOR · PLAN ·

· SECOND · FLOOR · PLAN ·

A SIX-ROOM HOUSE.


HOLSTON-PLACE
OHIO - AVENUE
LEVELIN - STREET
MARTINS STREET
-HOLSTON-PLACE-SECTION-A-
-AN-EXAMPLE-OF-SMALL-PARK-TREATMENT-
SCALE
N
-GROSVENOR-ATTERBURY-
-ARCHITECT-AND-COMMUNITY-PLANNER-

SEVEN HOUSES GROUPED AROUND A GREEN.

the promoters of the enterprise should have become converted, as the work progressed, to the belief that proper restrictions would greatly enhance the value of the property. They finally changed their whole point of view and decided that they would not attempt to market unbuilt-on lots and so lose control of the architectural element; that they would build no houses for sale, but, instead, hold and manage them on a rental basis.

Obviously they do not expect to build all the houses for a town of 40,000 or 50,000 people, which Erwin is likely to become before many years, but they will have given direction to the character of the future city and, as it progresses, the same wisdom will continue to guard its best interests by wise property restrictions.

In this very attractive little settlement, with the railroad tracks and shops lying in the foreground, there have been built up to the present time from Mr. Atterbury's designs some 50 cottages of frame construction: some of them stucco, others shingle, a few shingle and stucco. The houses are mostly two-story cottages with sloping roofs. There are one or two bungalows. The majority of the houses are detached, though some are group houses of an interesting character of four houses in a group.

The group of houses shown above, and known as "Holston Place," illustrates most effectively the great possibilities, hitherto undeveloped in this country, of the group plan and the charming results that are to be obtained in arranging houses around small neighborhood gardens or parks, thus getting away from the stereotyped arrangement of houses in more or less straight rows, set back a uniform distance from the street and presenting an extremely monotonous appearance.

With a frontage of approximately 350 feet the architect has grouped on this plot seven houses around a very attractive small green square. How much more delightful this treatment is than the usual one will be seen if one merely imagines what these same houses would look like on the same plot of ground, placed one after another and side by side on lots 50 feet wide.

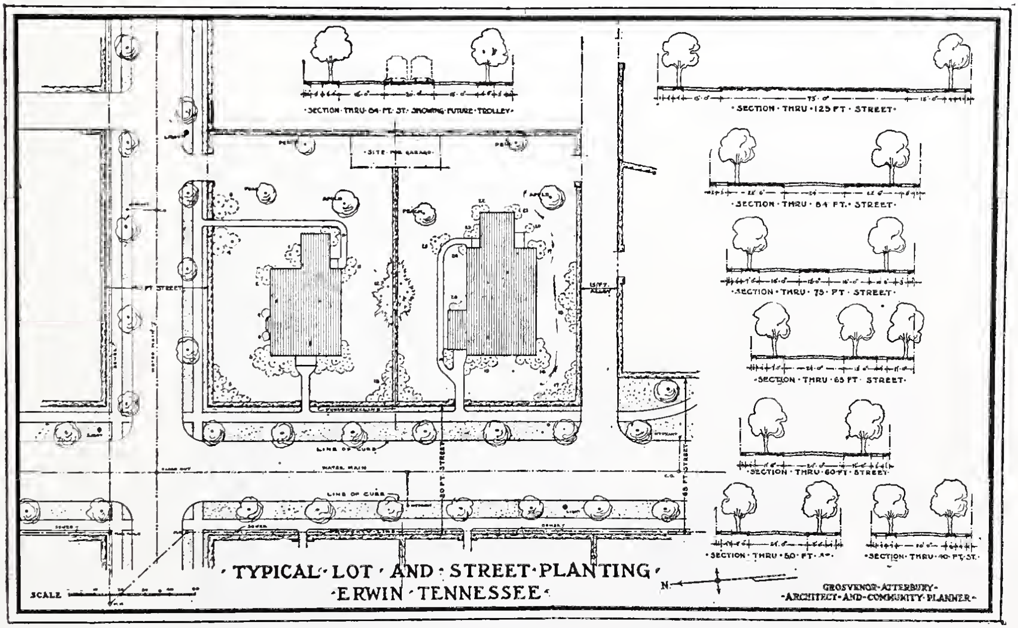
The houses are of four, five, six and

seven rooms and are extremely attractive in appearance as the elevations show.

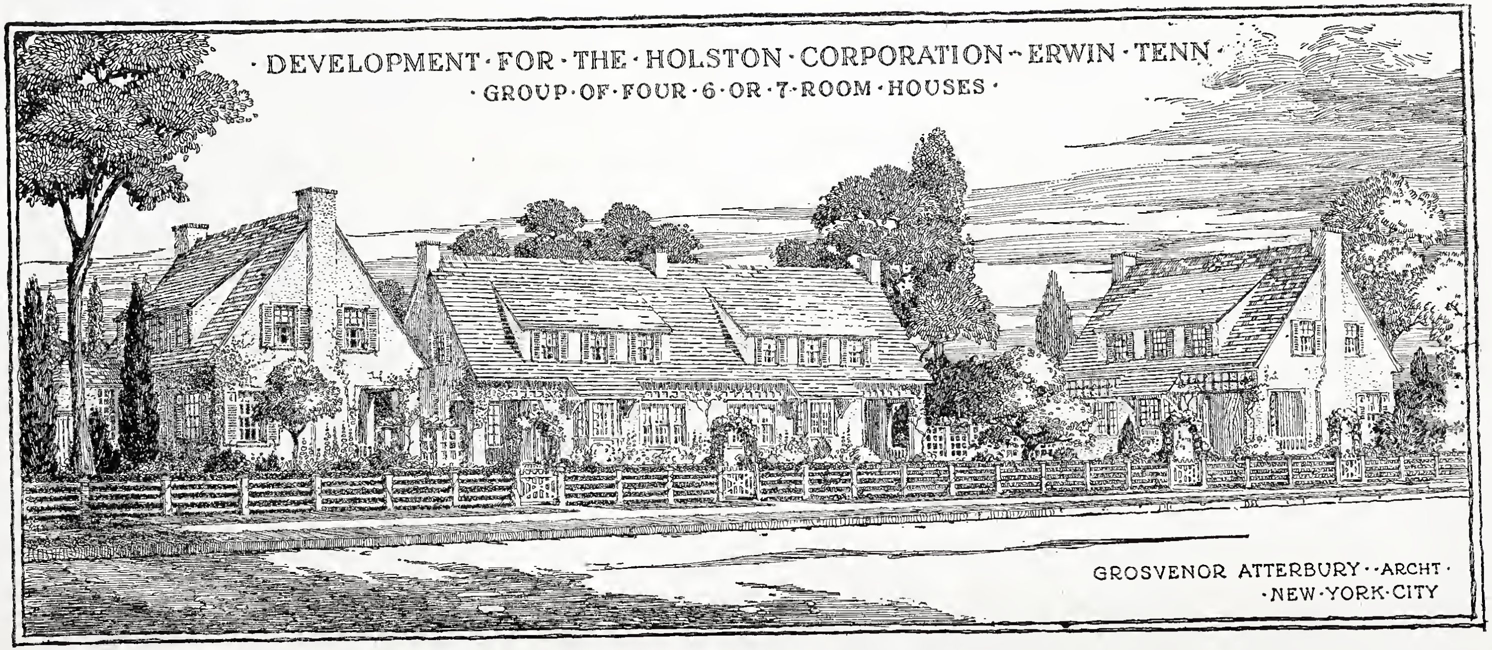
An interesting feature of these houses, which is applicable to other sections of the South, is that they are adapted to the local custom of building without cellars. In such cases it is necessary to provide an additional room on the ground floor in the shape of a large storeroom immediately adjoining the back porch. The rooms are all of generous size and every house is provided with an open fireplace with a regular chimney and hearth intended to burn wood logs, which are plentiful and comparatively cheap in that part of the country. All houses are provided with bathrooms and with all modern conveniences.

There are a number of interesting features to this development, which are quite characteristic of Mr. Atterbury's work and which are not to be found in the usual development. One of these is the delightfully quaint variation in the style of designs for decorations of the outside shutter panels shown on page 559. Another is the very interesting street lamp posts of wood, which Mr. Atterbury has felt it worth while to design in order to preserve a harmonious development. The planting plan shown on this page has many interesting features, especially the utilization of fruit trees as part of the landscape treatment around each house. This is not only a very decorative and artistic treatment, but a very practical one as well—one not sufficiently employed by other developers. Fruit trees cost comparatively little to plant; are attractive at all seasons of the year, and are a source of enjoyment and ultimately of revenue to the occupiers of the houses. They are greatly appreciated by workingmen and should be a feature of every workingman's colony.

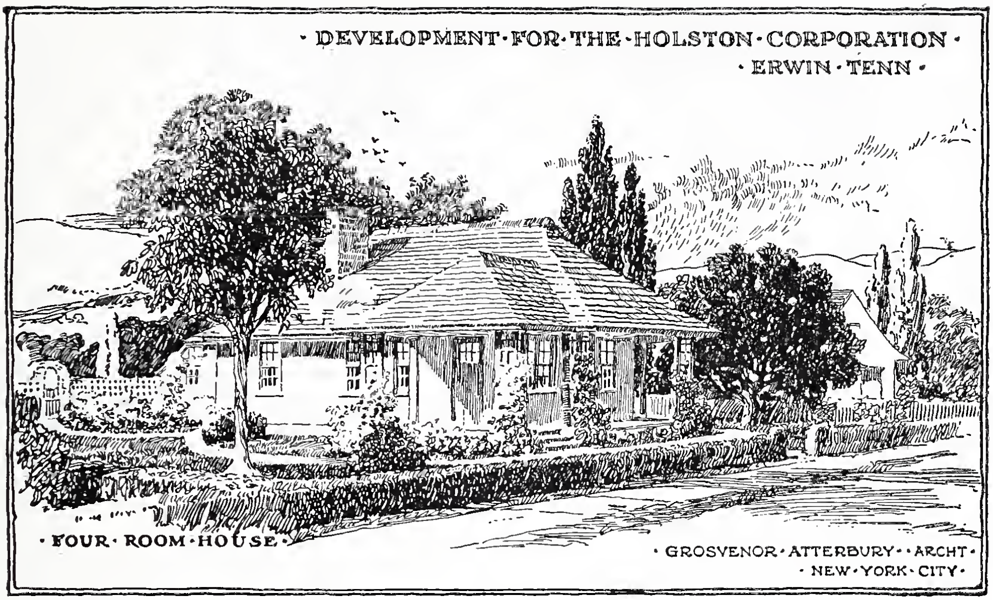
Figures as to costs of workingmen's dwellings, as we all know, mean very little unless we have at the same time a statement as to the methods by which they have been ascertained and the conditions under which contracts were let and materials furnished. They vary infinitely in different parts of the country and are, of course, different today from what they were yesterday. It is interesting, however, to learn that a year ago it cost only 10 cents a cubic foot to build these very attractive and artistic cottages.


SECTION THRU 64 FT. ST. SHOWING FUTURE TROLLEY
SECTION THRU 125 FT STREET
75' 0"
15' 0"
SITE FOR GARAGE
SECTION THRU 84 FT. STREET
SECTION THRU 75 FT STREET
15 FT. ALLEY
SECTION THRU 65 FT STREET
SECTION THRU 60 FT STREET
LINE OF CURB
WATER MAIN
LINE OF CURB
80 FT STREET
65 FT STREET
SECTION THRU 50 FT ST.
SECTION THRU 40 FT ST.
TYPICAL LOT AND STREET PLANTING
ERWIN TENNESSEE
N.
SCALE
GROSVENOR ATTERBURY
ARCHITECT AND COMMUNITY PLANNER

PLANTING PLAN.
Note the Use of Fruit Trees.


· DEVELOPMENT · FOR · THE · HOLSTON · CORPORATION ~ ERWIN · TENN ·
· GROUP · OF · FOUR · 6 · OR · 7 · ROOM · HOUSES ·
GROSVENOR ATTERBURY · · ARCHT ·
· NEW · YORK · CITY

A GROUP OF FOUR HOUSES.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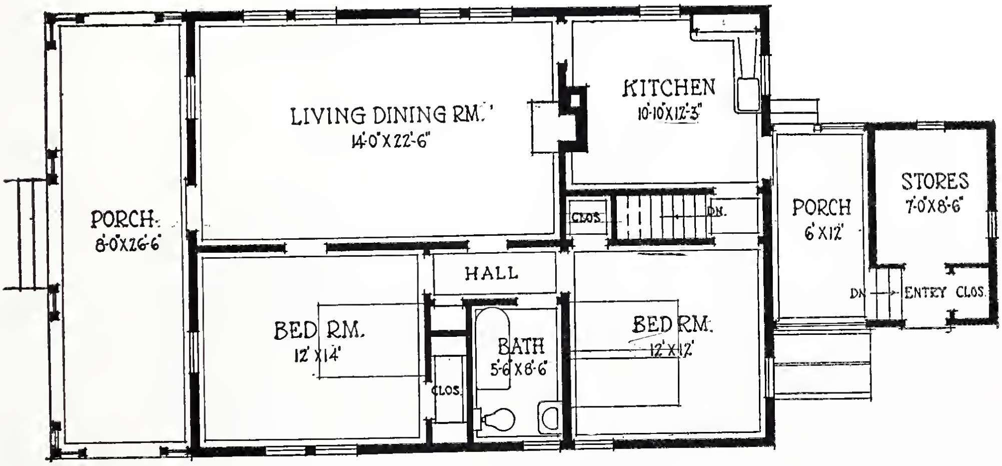
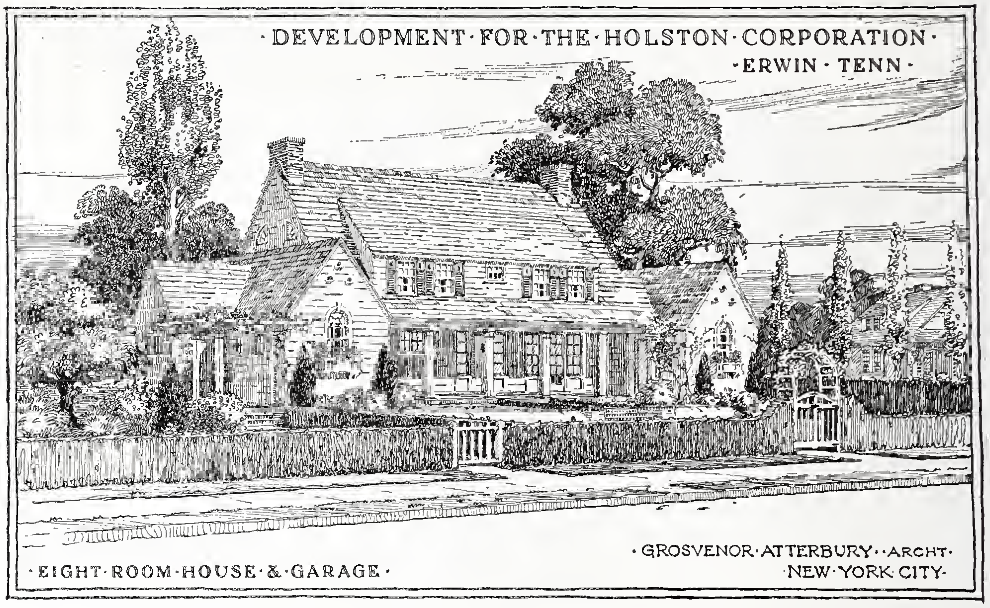
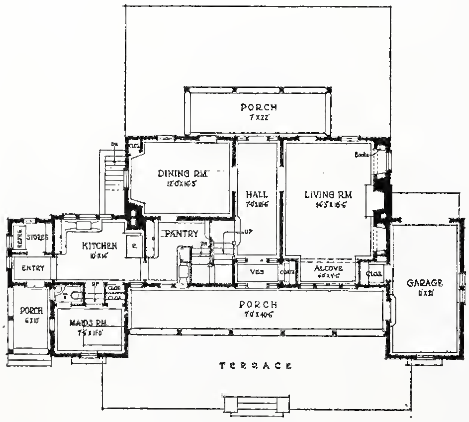
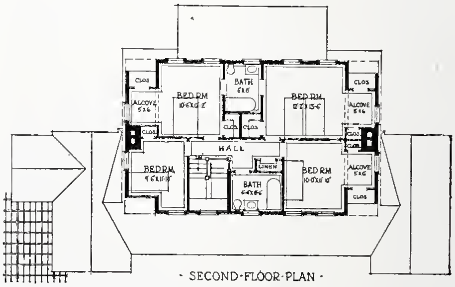


ONE OF THE BUNGALOWS.


·DEVELOPMENT·FOR·THE·HOLSTON·CORPORATION·
·ERWIN·TENN·
·EIGHT·ROOM·HOUSE·&·GARAGE·
·GROSVENOR·ATTERBURY··ARCHT·
·NEW·YORK·CITY·

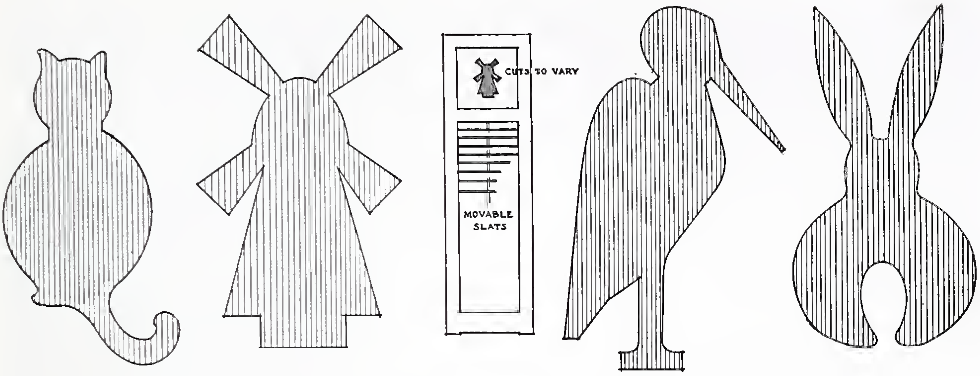


FIRST·FLOOR·PLAN·



·SECOND·FLOOR·PLAN·

AN EIGHT-ROOM HOUSE—THE GARAGE A PART OF THE HOUSE.



DESIGNS FOR CUTS IN SHUTTER PANELS

ONE WAY OF GETTING VARIETY.

Of course this could not be repeated in the North and in these war times.

This development at Erwin is especially significant as showing the possibilities of well-ordered, harmonious and attractive designing in the development of what is ordinarily so sordid a thing as a railroad shop settlement, and illustrates anew the great advantage of employing for the development of even the humble workingman's dwelling the best expert advice and direction.

[We trust that the members of the architectural profession have not been misled by a very inaccurate editorial in the April issue of the Journal of the American Institute of Architects, on the subject of the new Governmental Housing Standards.

Our readers will recall that we published in our April issue an article not only giving the text of these "Standards," which we stated had been adopted by the Federal Government through the Department of Labor, but containing also an illuminating commentary on them by Mr. Lawrence Veiller.

The Journal of the American Institute of Architects gives the impression that the "Standards as presented in The Architectural Record were:

(1) Tentative.

(2) Not yet ready for publication.

(3) Had not been officially adopted by either the Department of Labor or the Shipping Board.

(4) Were a hasty draft given out in proof form only.

(5) Had been considerably revised already from the form as published in The Architectural Record.

Mr. Eidlitz, writing as recently as May 15th, states that the "Standards" as published in the April issue of The Architectural Record were:

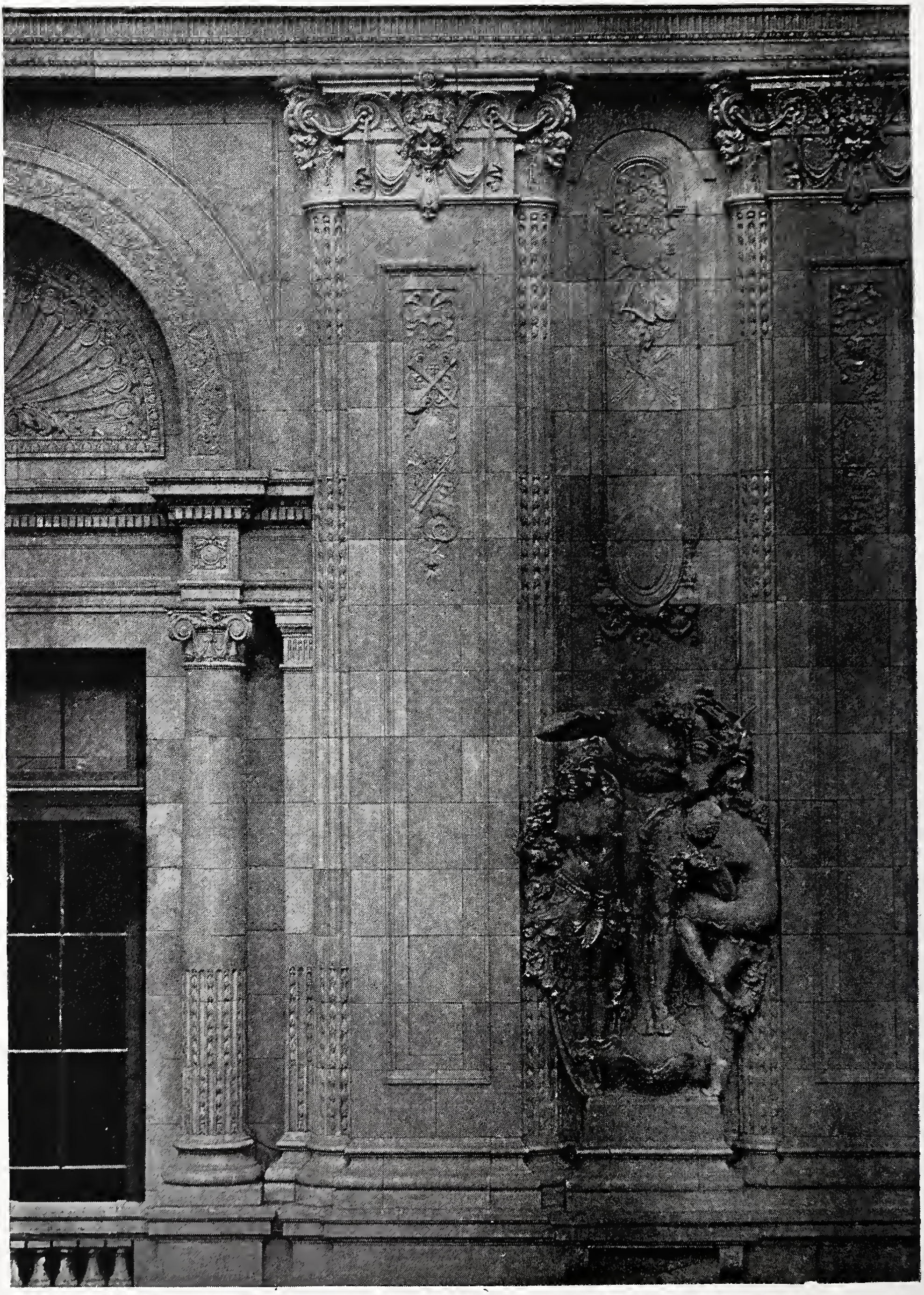
(1) *Not* tentative.

(2) *Had* been ready for publication for some time before appearing in The Architectural Record.

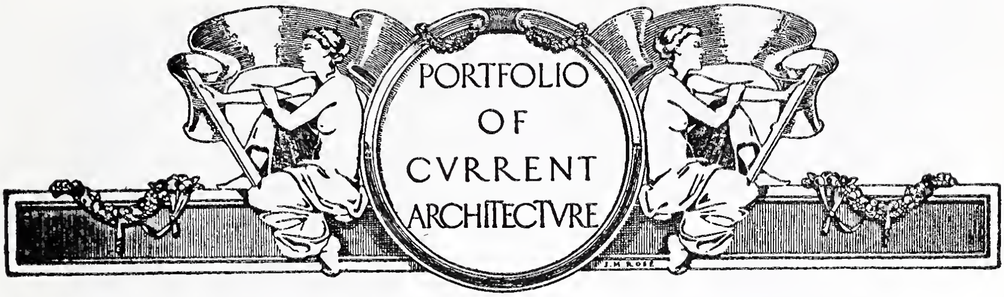
(3) *Were* officially adopted by the Bureau of Industrial Housing and Transportation of the United States Department of Labor on March 7th.

(4) Were *not* a hasty draft given out in proof form only but "were issued after careful consideration" * * * and that they "represent the best thought of those who co-operated in preparing them."

(5) That they had *not* been considerably revised since published in The Architectural Record, but, on the contrary, "they appeared in print early in April substantially in the form printed in The Architectural Record, and that only two changes have been made since then.—Editor.]



ORPHEUM THEATRE, ST. LOUIS, MO.
G. ALBERT LANSBURGH, ARCHITECT; LEO LENTELLI, SCULPTOR.



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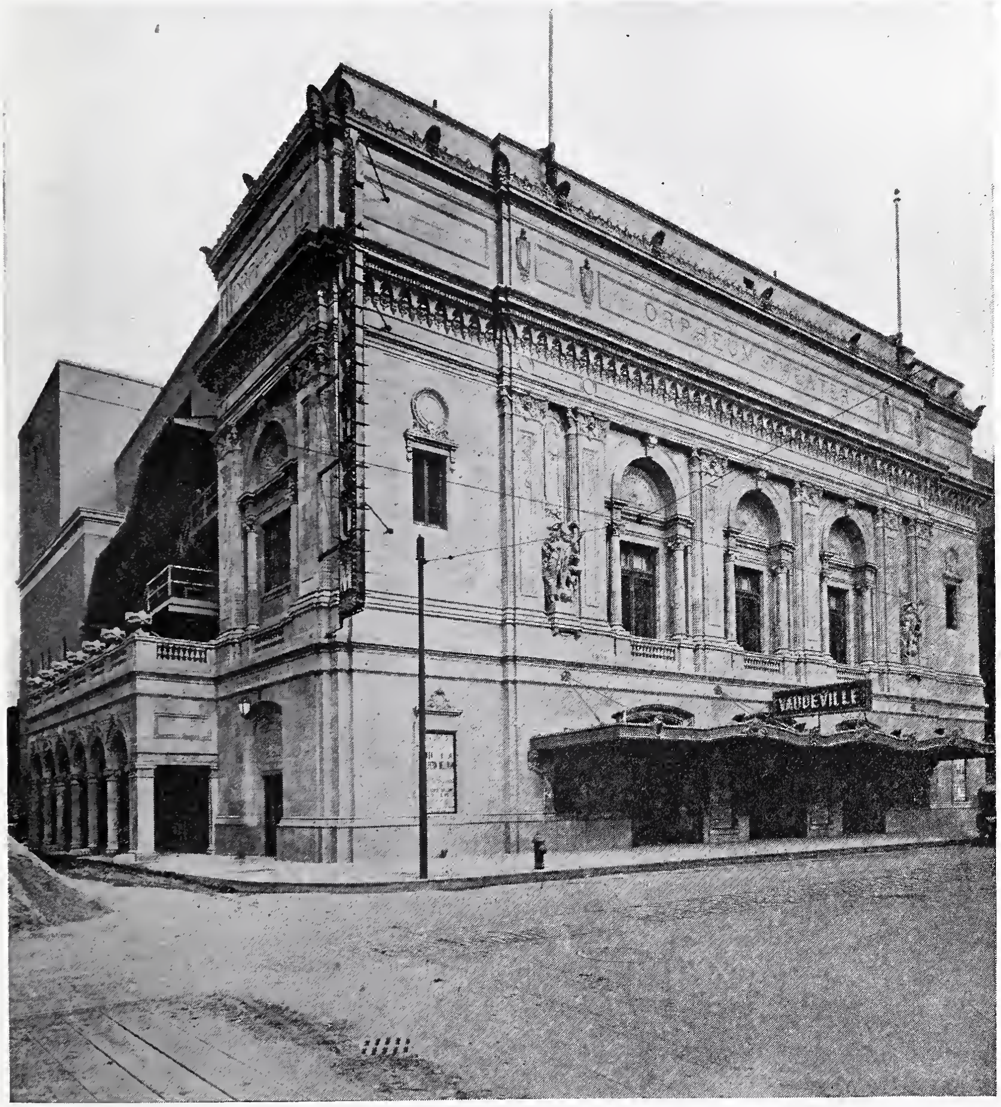

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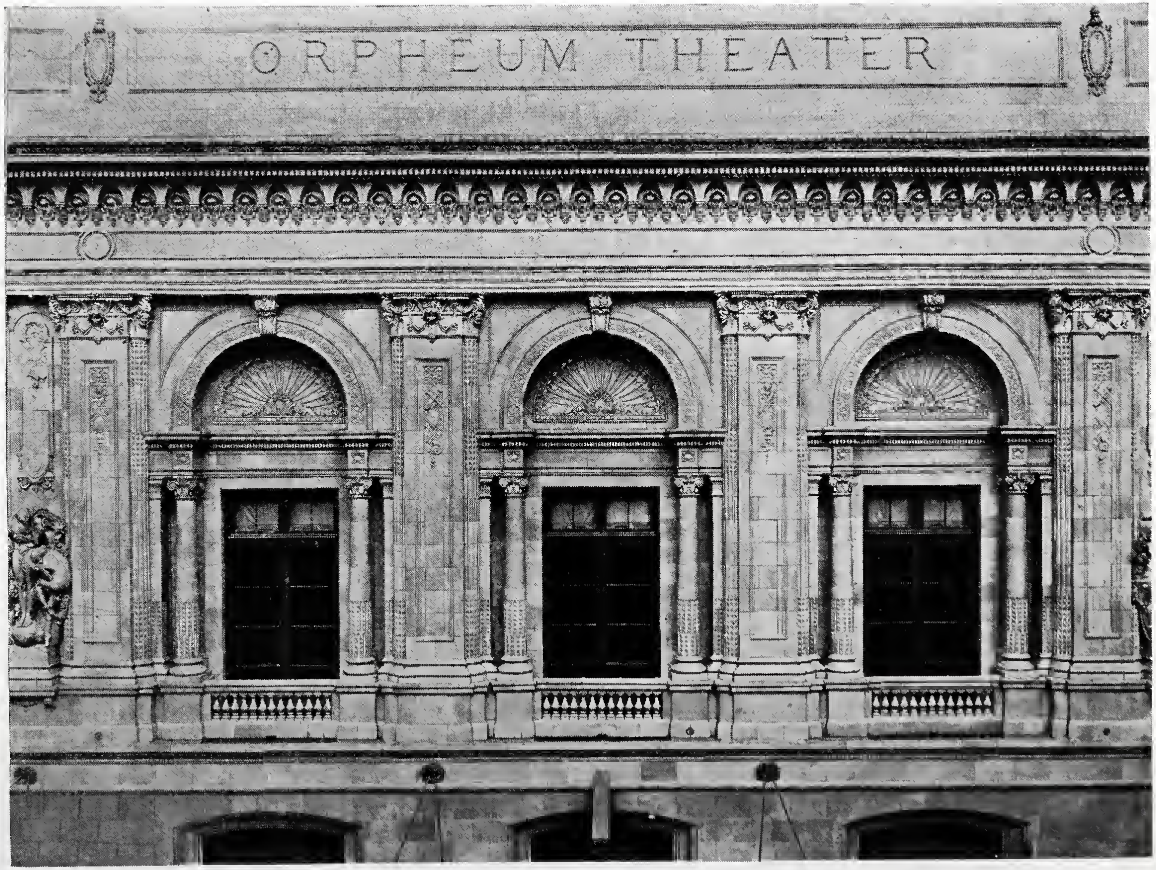

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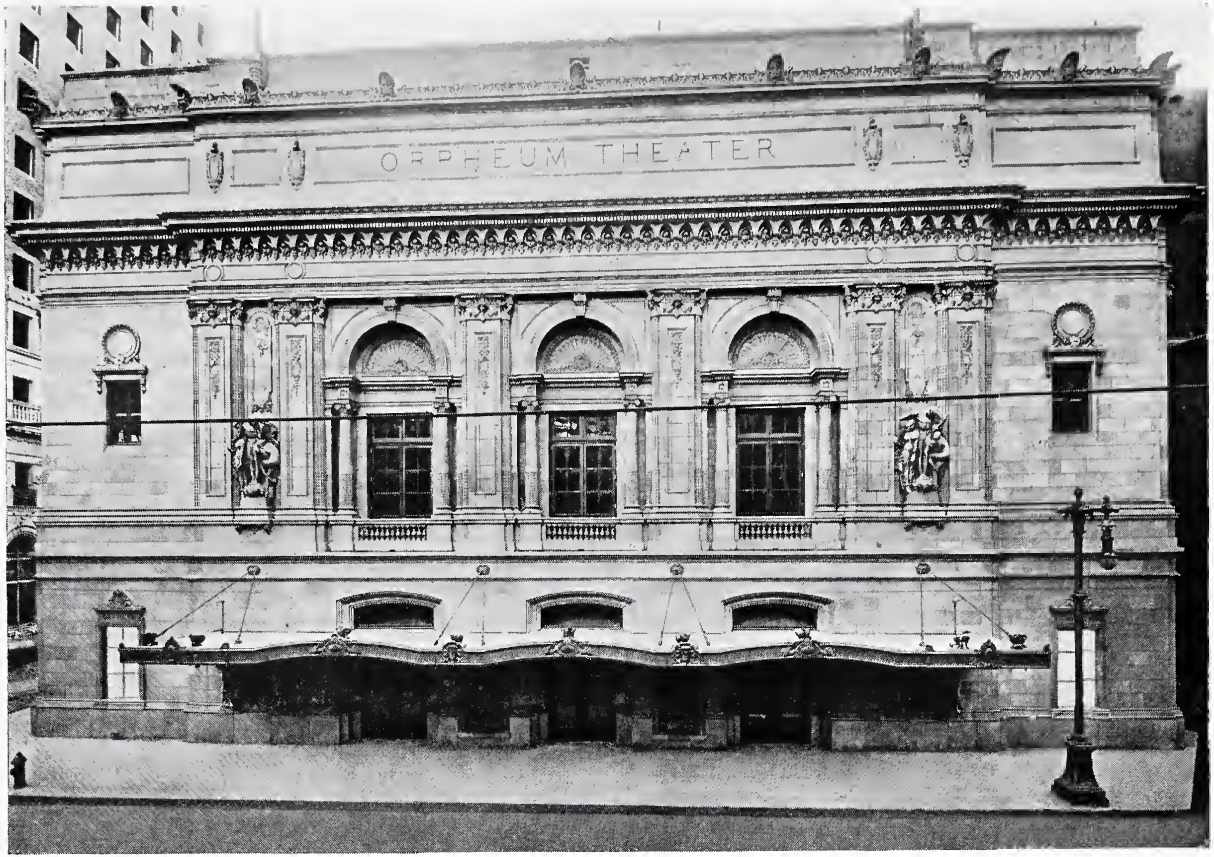

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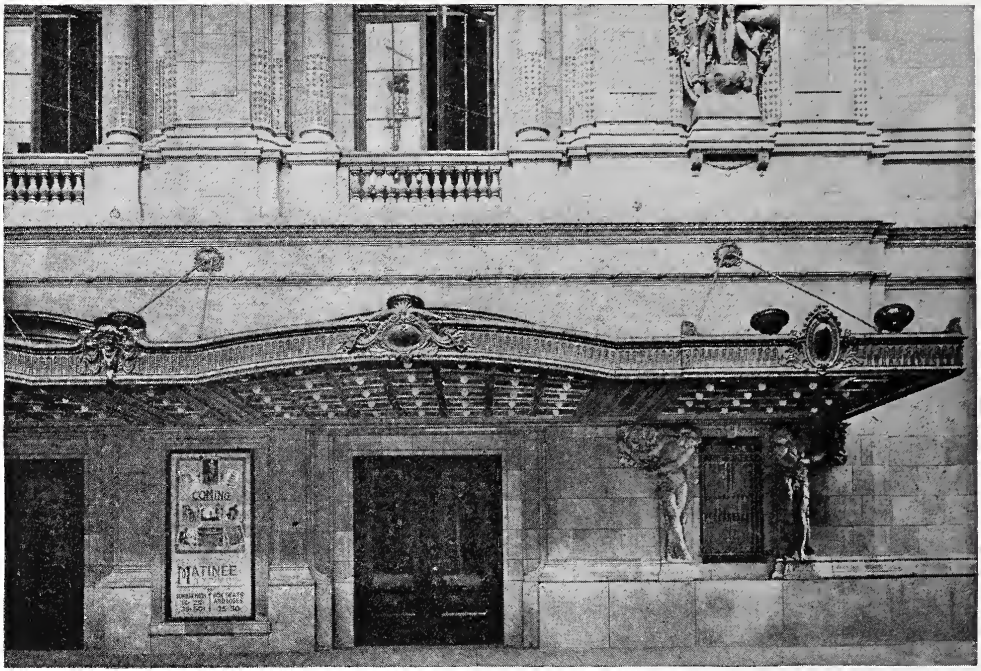

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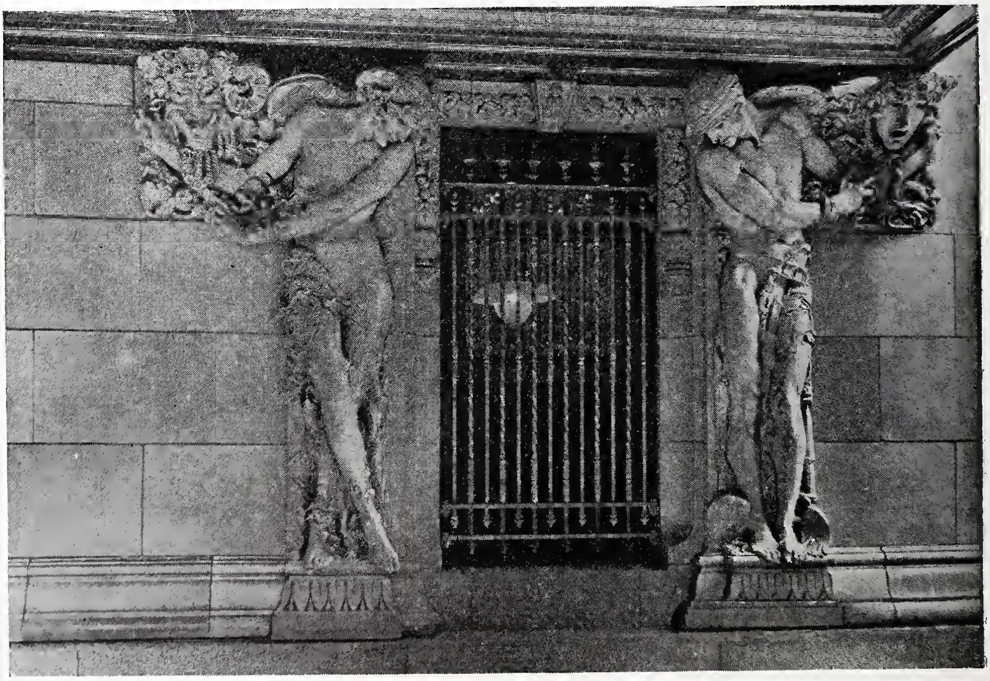
G. Albert Lansburgh, architect; Leo Lentelli, sculptor.



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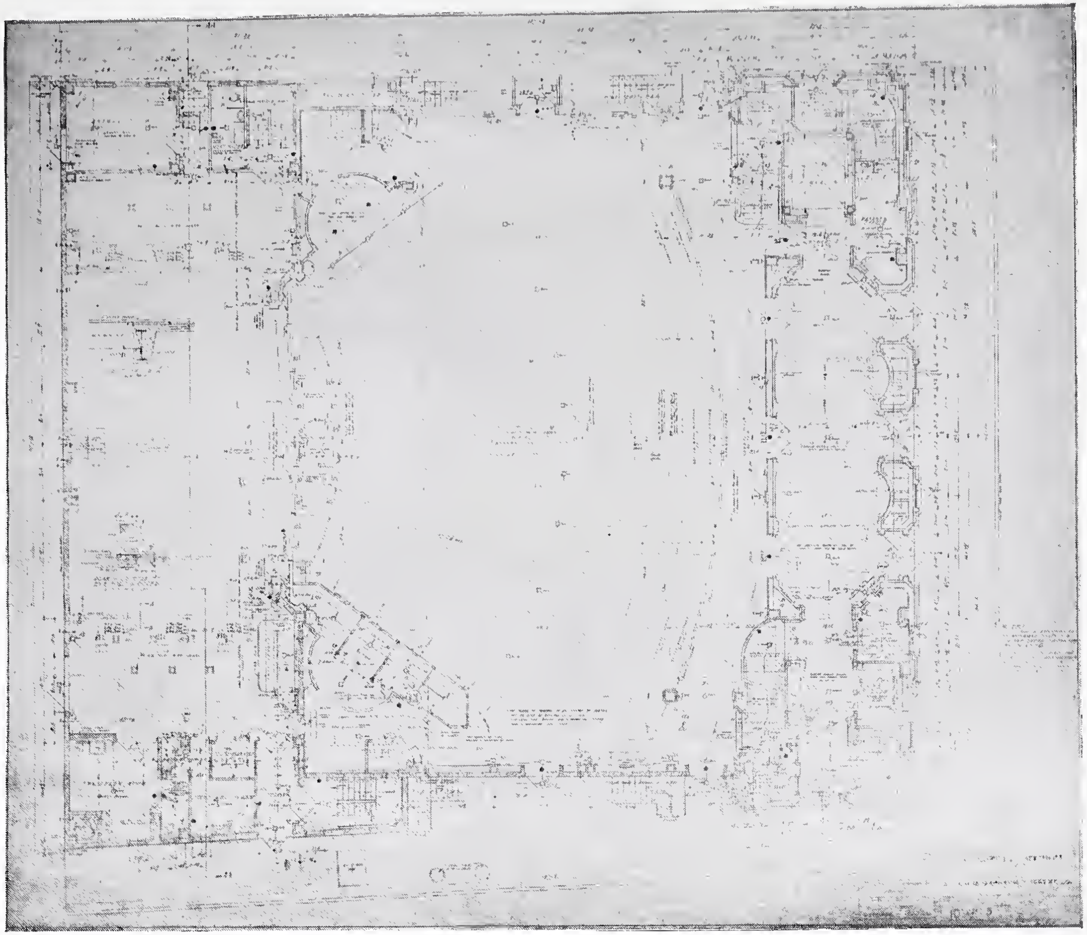
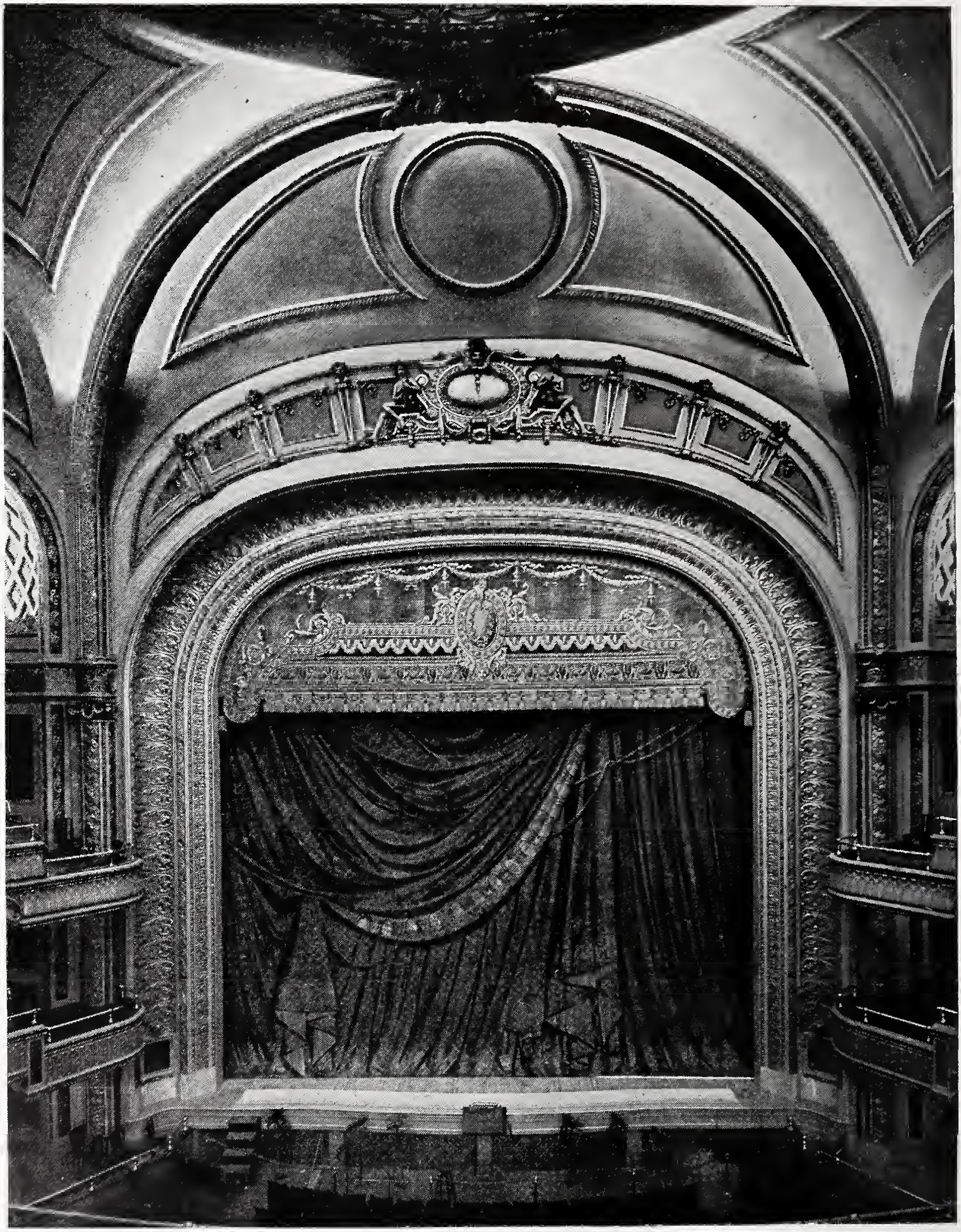


FIRST FLOOR PLAN—ORPHEUM THEATRE, ST. LOUIS, MO. G. ALBERT LANSBURGH, ARCHITECT.



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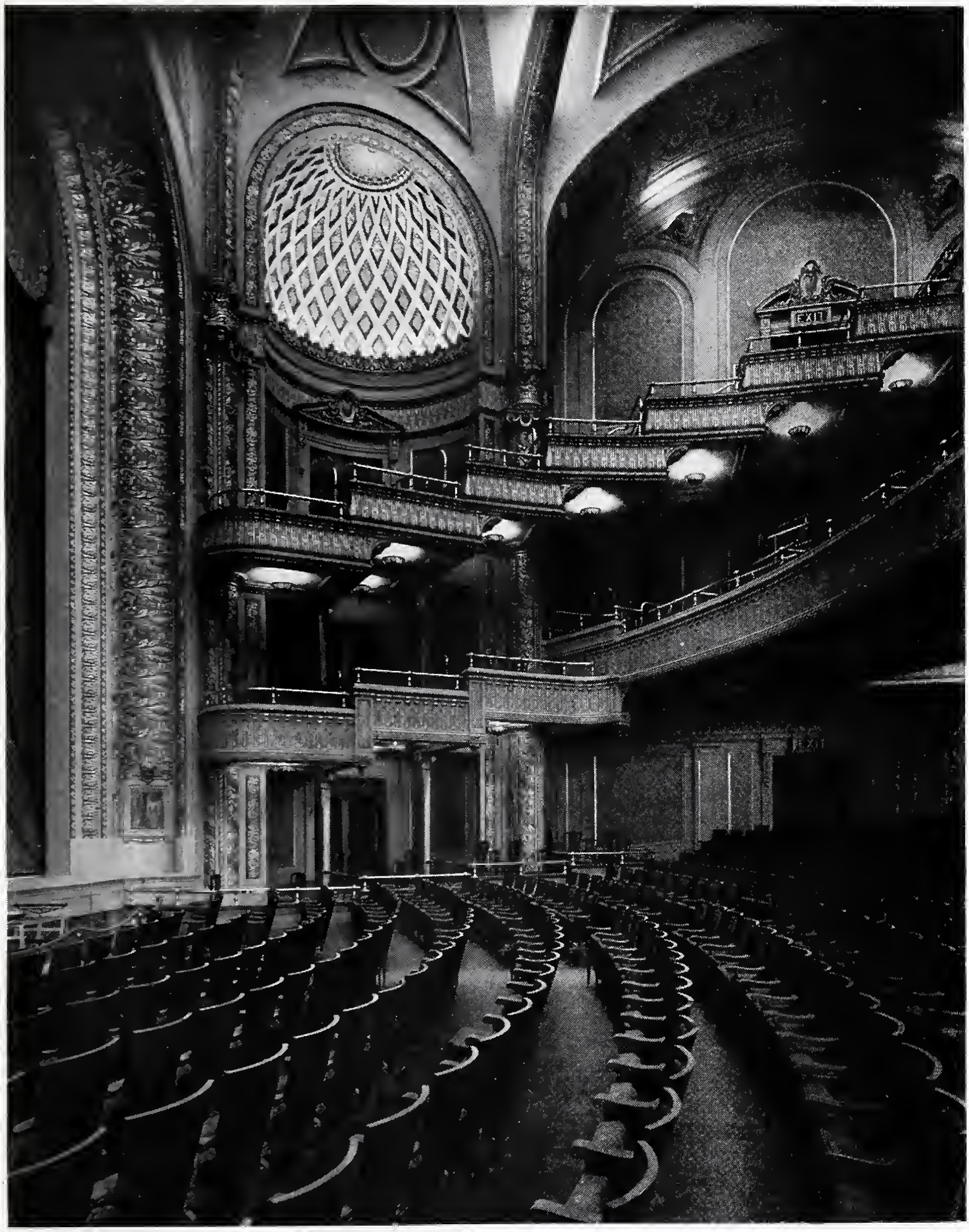

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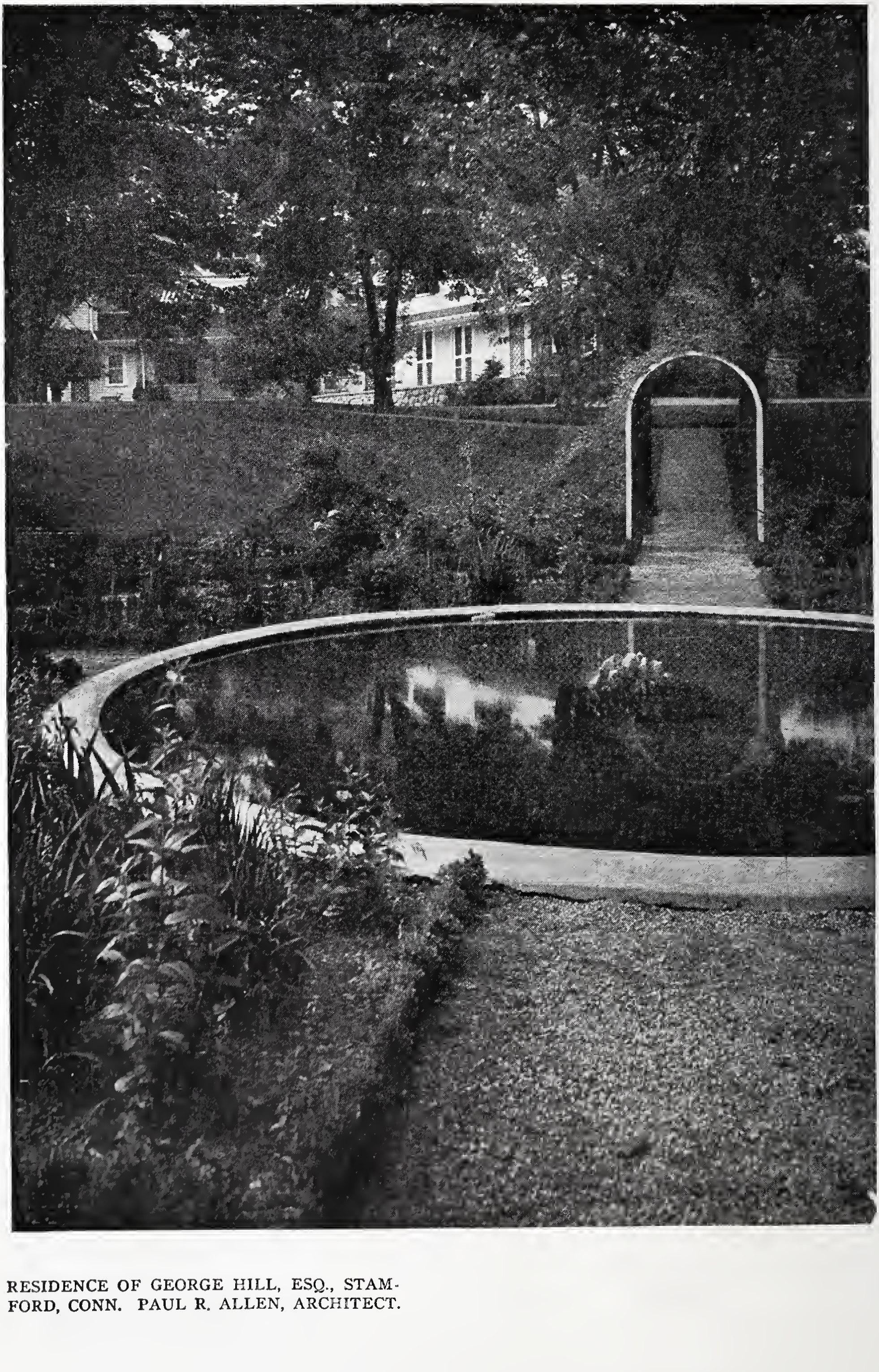
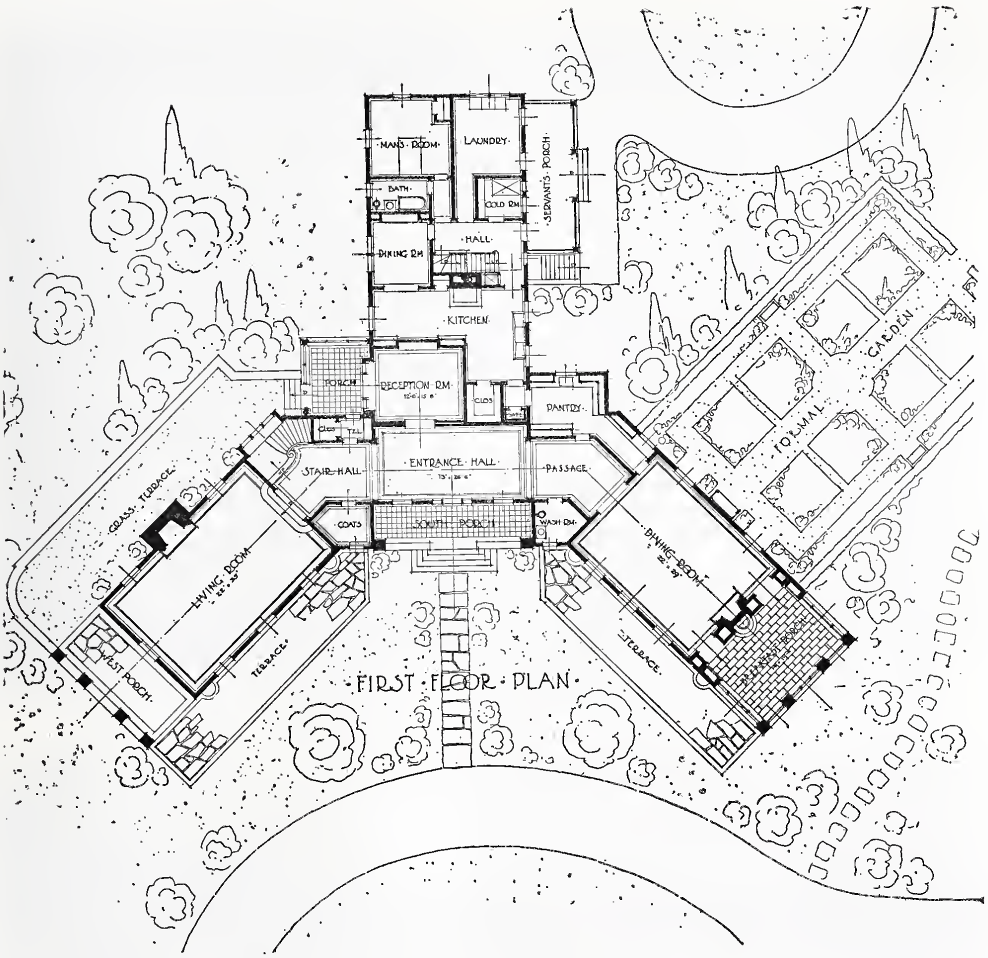
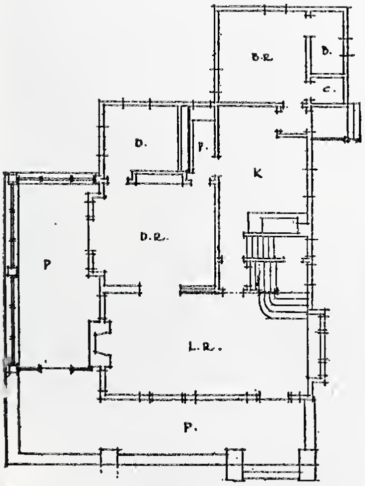
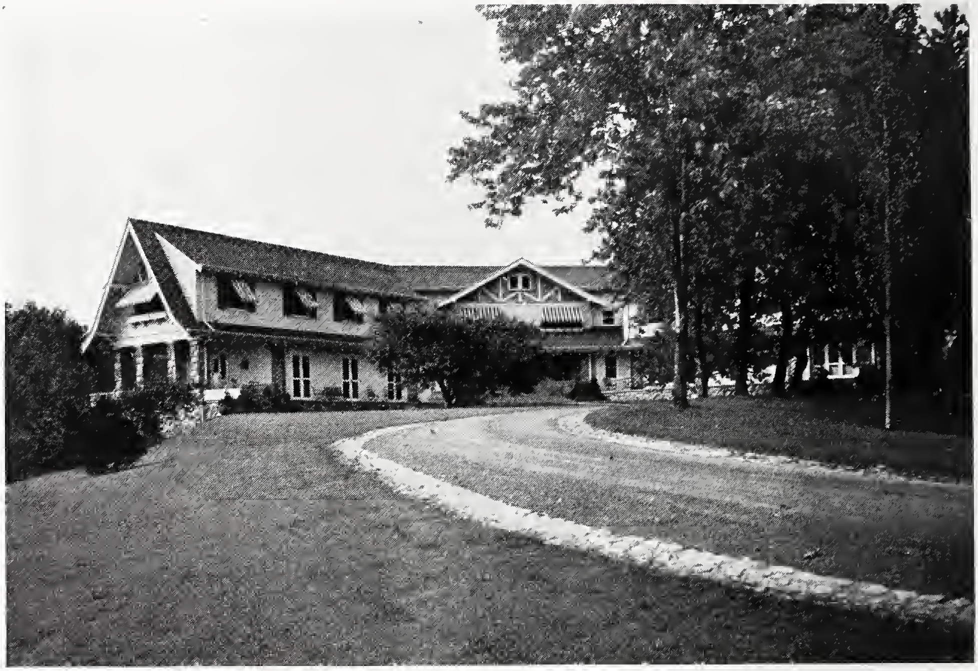


RESIDENCE OF GEORGE HILL, ESQ., STAMFORD, CONN. PAUL R. ALLEN, ARCHITECT.





FIRST FLOOR PLAN—RESIDENCE OF GEORGE HILL, ESQ., STAMFORD, CONN. PAUL R. ALLEN, ARCHITECT. SMALL PLAN SHOWS OLD HOUSE BEFORE ALTERATIONS AND ADDITIONS WERE MADE.



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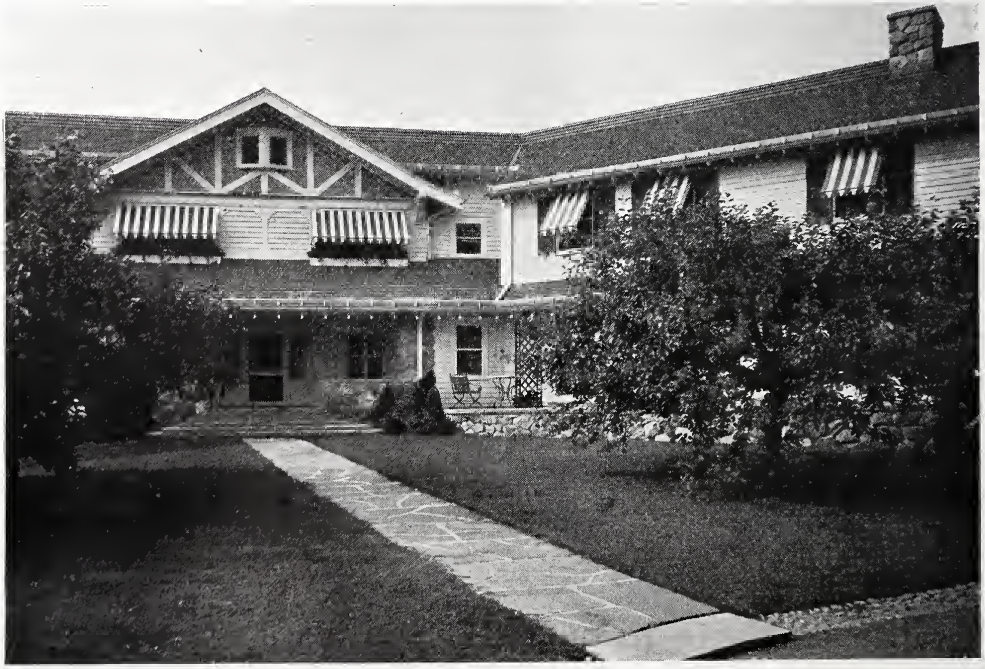
Paul R. Allen, Architect.



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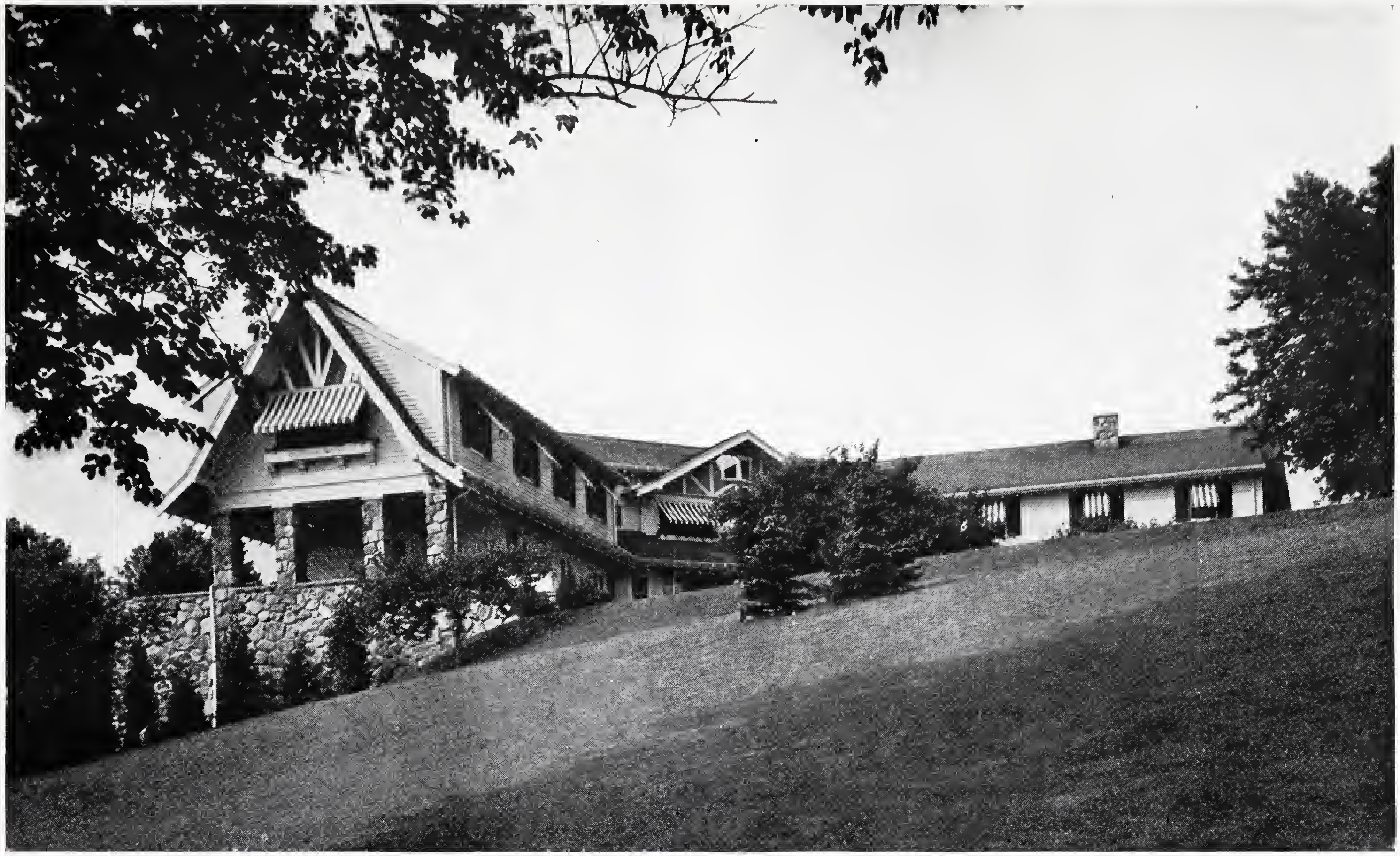

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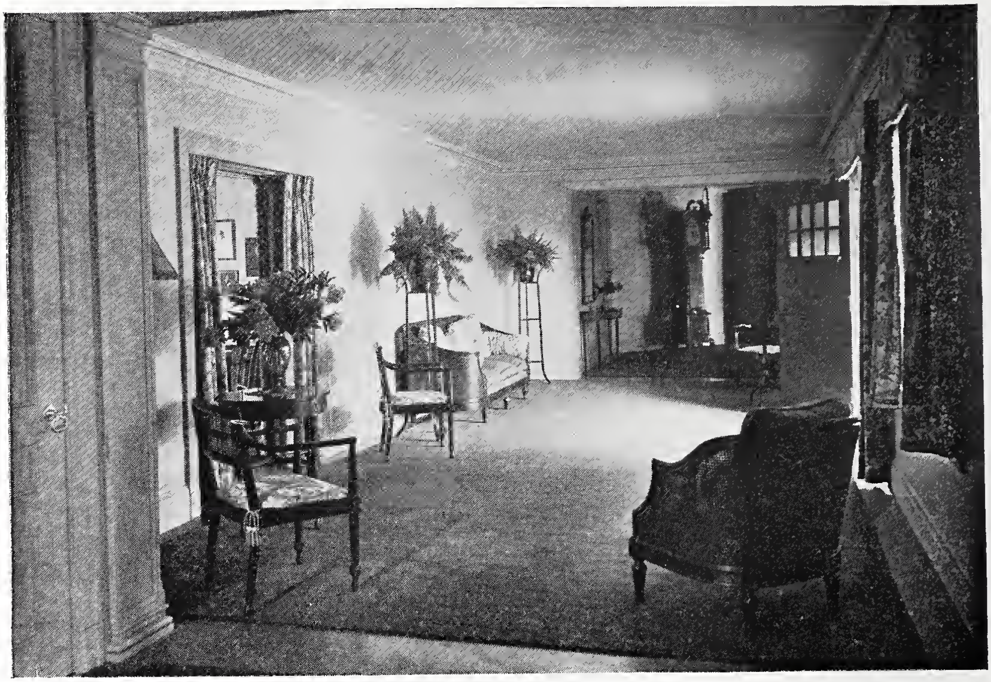

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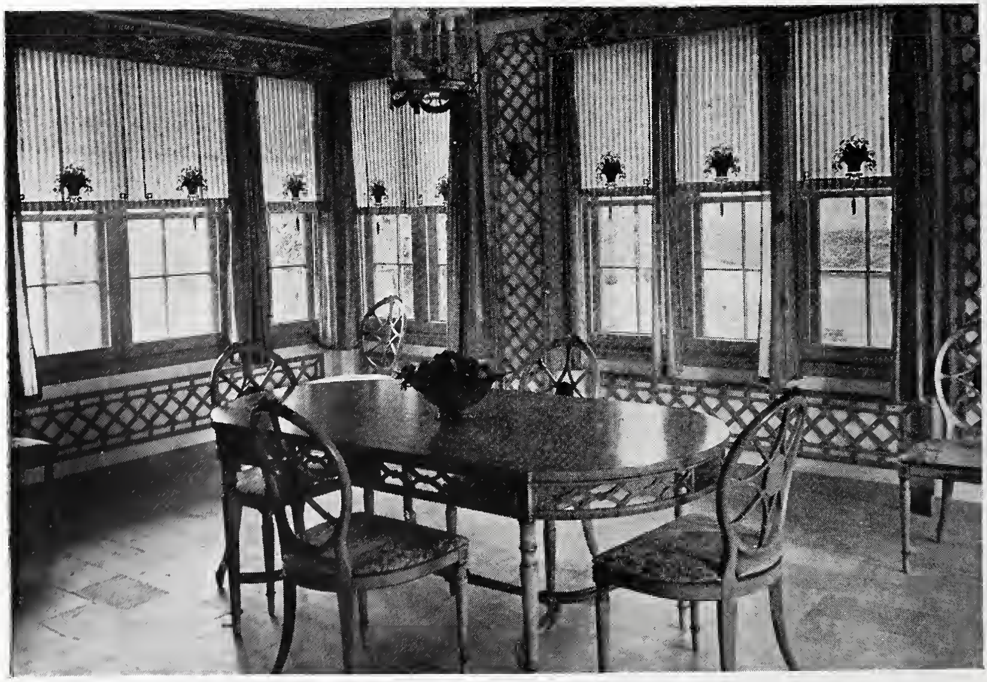
Paul R. Allen, Architect.



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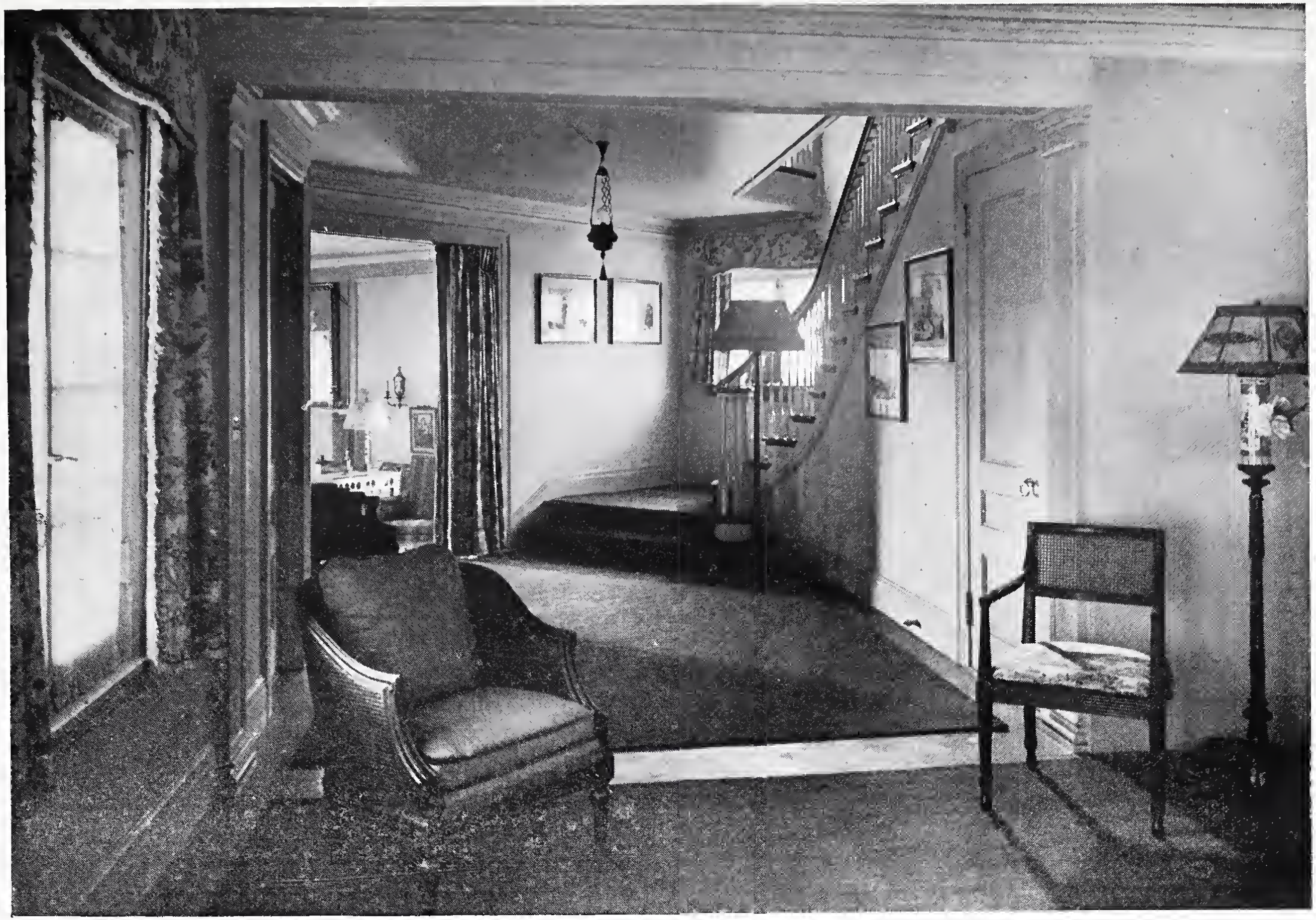

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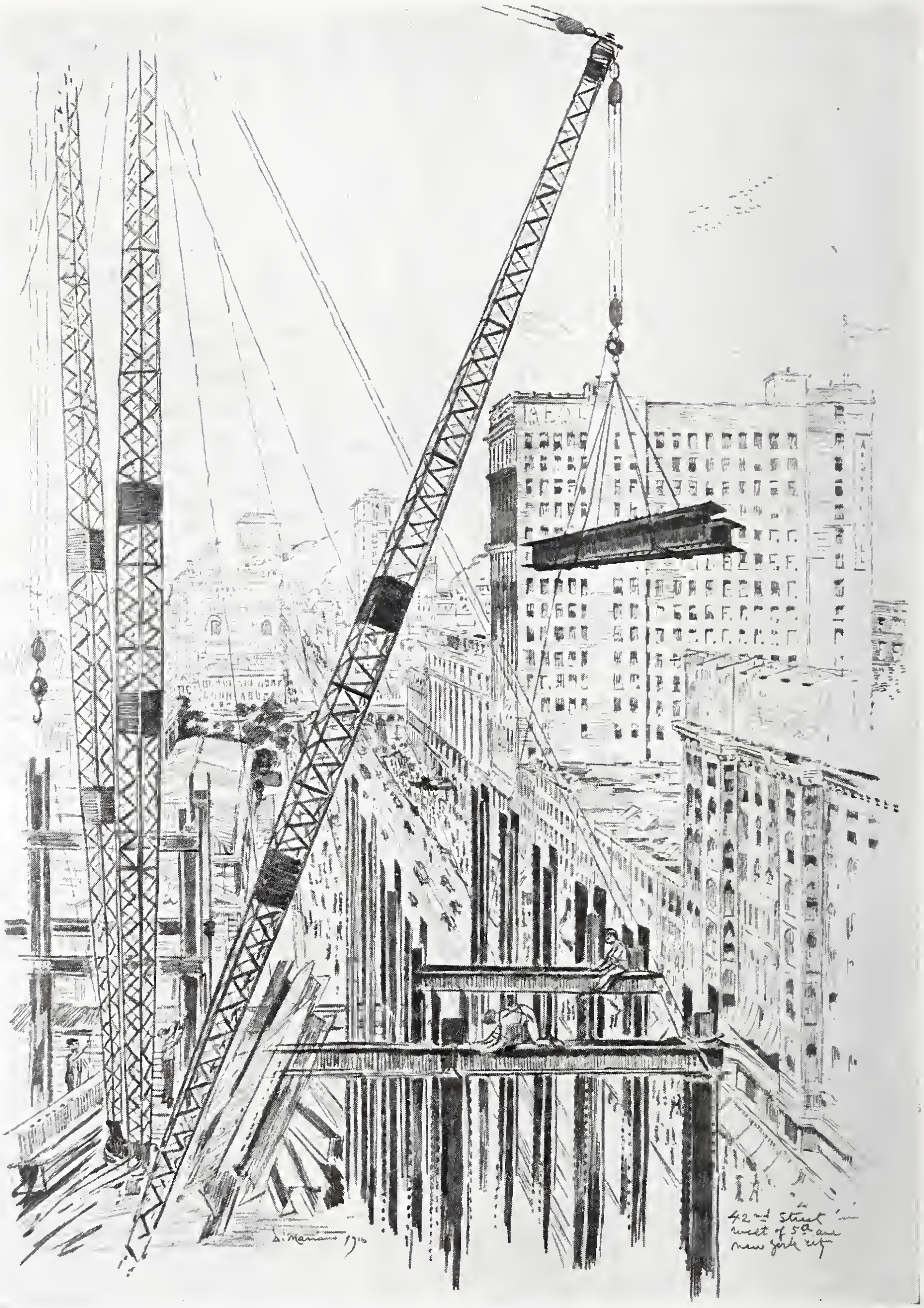
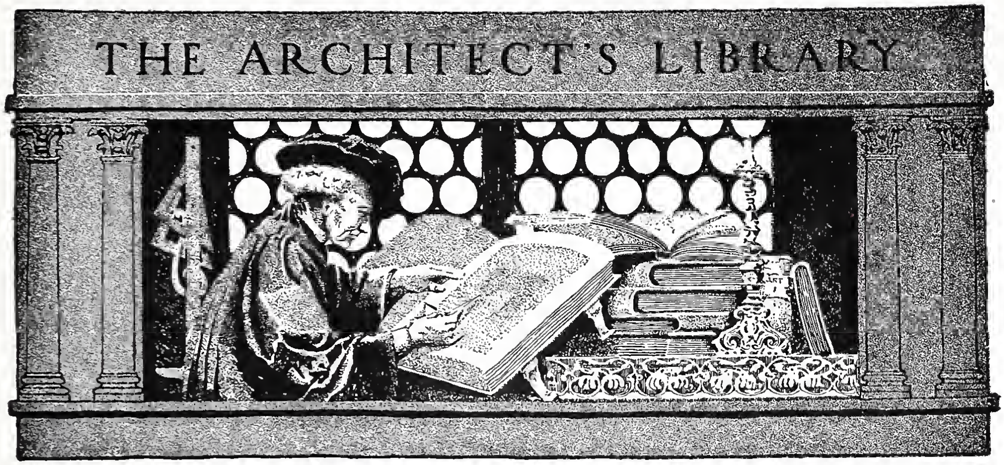

Di Mariano 1916
42nd Street west of 5th ave new york city

DRAWING BY JOHN DI MARIANO.



WAR BOOKS OF THE CATHEDRALS

By BARR FERREE

III. Arras, Cambrai, Châlons-sur-Marne, Laon, Meaux, Nancy, Noyon, Paris, St. Dié, Senlis, Soissons.

THE list of French cathedrals directly affected by the Great War is, as shown above, formidable. Other cathedrals are so close to the war zone as almost to warrant inclusion in a complete list; but for the present, at least, we are fortunate in not being compelled to add others than those named here and previously. The record as it stands is already too grievous, containing, as it does, some of the most notable and beautiful of the churches of France, and it is to be hoped that the list will not be too unduly extended. Of the churches named above, Nôtre Dame at Paris calls for no further mention save to recall that its roof was slightly injured by an aerial bomb early in the war. The injury was but slight, and naturally has produced no literature.

Of the other churches, several have been mentioned in one or another of the books noted in the earlier papers of this series. The best general book on the cathedrals, as a whole, is *Les Allemands Destructeurs de Cathédrales et de Trésors du Passé,* which reviews in an adequate manner the earlier mishaps to most of these churches.. Meaux, Senlis and Soissons are treated by Paul Ginisty and Arsène Alexandre in *Le Livre du Souvenir;* Soissons, Laon and Senlis in Jean de Bonnefon's *Les Cathédrales de France devant les Barbares;* Senlis, Soissons, Arras and Nancy by Marius Vachon in *Les Villes Martyres de France et de Belgique;* and Soissons, Senlis and Arras in *The Martyred Towns* by André Michel.

The cathedral of Arras, like most of that interesting city, has practically disappeared through the shelling of the German guns. It is but the simple truth to say that the loss to art in its destruction was not great, for it dates only from 1755 and was added to from 1814 to 1833. Its destruction, for it is now only a mass of ruins, was wholly without excuse. Built on a high elevation, and approached by a long flight of steps, it offered an easy mark to the barbarian.

From an illustrative standpoint the most interesting publication on Arras is *Arras, 1914-1915,* by Madeleine Wartelle, included in *Les Champs de Bataille, 1914-1915: Les Cités Meurtries.* The author treats of the early days of a bombardment that has lasted almost uninterruptedly throughout the war, and gives illustrations of many buildings, before and after bombardment. Copiously illustrated also, and a good summary of the bombardment as far as it goes, is *Arras sous les Obus* by the Abbé E. Foulon. It includes a preface by Mgr. Lobbedey, bishop of Arras, under whose editorship was published *La Guerre en Artois*. This latter book deals largely with the work of the priests and ecclesiastics in and around Arras. *Arras avant la Guerre* is a brief review of the city, now practically no longer existent, by Camille Enlart, copiously illustrated with photographs of structures human eyes will see no more. *La Pentecôte à Arras,* 1915, by Joseph Schewæbel, is a sympathetic account of a visit to Arras in the midst of the siege. A chapter on Arras is included in *D'Oran à Arras* by Henry d'Estre, a book of war impressions by an African officer; he includes a chapter on Soissons.

Arras has not been fortunte in its cathedrals. That one just destroyed by the Germans may rightly be designated as "modern"; but before the Revolution it had an older and larger cathedral, dating from the twelfth, possibly in some parts from the eleventh century, with additions in the thirteenth, fifteenth and sixteenth. It was much larger than its successor, having a length of 348 feet and a tower 240 feet high. Sold in the Revolution as no longer desired, it was gradually torn down, and finally destroyed by the orders of Napoleon by means of mines and artillery, a singular forecast of the fate of its successor! The history of this older cathedral has been preserved by Auguste Terninck in his *Essai Historique et Monographique sur l'ancienne Cathédrale d'Arras* (1853).

Cambrai, like Arras, lost its Gothic cathedral in the Revolution. As at Arras, the older building was a large and splendid church, with a single tower at the entrance end, surmounted by a high spire. It was first adequately described by A. Le Glay in his *Recherches sur l'église métropolitaine de Cambrai* (1825), a quarto, with numerous lithographic plates. A thoroughly modern book is the *Histoire artistique de la Cathédrale de Cambrai,* by Jules Houdoy, which forms volume 7, 4th series, of the *Mémoires de la Société des Sciences de l'Agriculture et des Arts de Lille* (1880). The author draws copiously on the accounts of the cathedral. A later *Monographie de l'ancienne Cathédrale de Cambrai,* by the Abbé A Pastoors, appeared in the *Revue de l'art chrétien* for 1904.

Cambrai has long been in the hands of the Germans, who have occupied it from the early days of the war. No one knows what has happened in the city in that time. The cathedral was originally the church of the abbey of the St. Sépulcre. It was built in the eighteenth century, and was partly burned in 1859; after which date it was rebuilt and extended in size. No books, at this writing, have appeared on the doings of the Germans at Cambrai.

Events at Châlons-sur-Marne have been chronicled by Mgr. Tissier, bishop of Châlons, in the book *La Guerre en Champagne au Diocèse de Châlons,* which was published under his direction. It covers the year from September, 1914, to September, 1915, and has reached five editions. It presents the war from the ecclesiastical side. *Châlons en 1914* is a diary reprinted from the *Journal de la Marne,* beginning with July 29, 1914, and concluding with December 4 of that year. It is not a daily diary, only those days being mentioned which included some incident worthy of record. *Châlons-sur-Marne pendant l'Occupation Allemande,* by Maurice Pierrat, is concerned with the uncomfortable month of September, 1914, when the barbarians occupied Châlons.

The cathedral will be recalled as an interesting monument of the thirteenth century, with later additions, including a frontispiece of the eighteenth century. The literature relating to it is not rich, although the building is frequently referred to in artistic and architectural histories. The *Diocèse ancien de Châlons-sur-Marne, histoire et monuments,* by Edouard de Barthélemy, 2 vols. (1861), is an ecclesiastical history; the second volume contains a brief historical sketch of the cathedral. *Eglise Cathédrale de Châlons,* by L. Grignon (1885), is a brief but useful account. The latest account of the cathedral, by L. Demaison, forms part of the admirable *Guide Archéologique du Congrès de Reims en 1911,* accompanied with a dated plan.

Laon, like Cambrai, has long been in the possession of the Germans. Nothing is known as to what has transpired there. Some photographs showing the use of the cathedral by the Germans, the latest depicting it as a hospital, have appeared in the American newspapers as recently as the present year. With their later vindictive destructiveness one can but await the expulsion of the Germans with bated breath.

Notwithstanding the importance of the cathedral of Laon in the history of French architecture, and its own great inherent beauty, very little has been written about it. The *Essai historique et archéologique sur l'église cathédrale de Notre Dame de Laon,* by Jules Marion (1843), is a brief pamphlet. An extended account of the cathedral, with many illustrations, forms the larger part of the third volume of the stately *Antiquités et Monuments du Département de l'Aisne* by Edouard Fleury (1879). A competent account of the cathedral is supplied by the Abbé Auguste Bouxin in *La Cathédrale Notre Dame de Laon* (1890). Both the cathedral, with a dated plan, and the other monuments of Laon are adequately treated by L. Broche in the Reims *Guide* noted above.

Many general books on the war contain reference to Meaux, as it occupied a pivotal position in the great battle of the Marne. Its cathedral three times, in 1915, 1916 and 1917, witnessed thanksgiving services for this colossal achievement of French arms. Mgr. Emmanuel Marbeau, bishop of Meaux, has written an admirable little book *Souvenirs de Meaux, avant, pendant et après la Bataille de la Marne,* accompanied with maps and illustrations. His activities at the time of the battle were very great, and he was particularly helpful to the thousand or so of the population of 14,000 that remained in the city after it had been abandoned by the civil authorities. Georges Montorgueil also treats of Meaux in the superb *Les Champs de Bataille, 1914-1915: Les Cités Meurtries,* copiously illustrated, like all sections of this sumptuous work. Very satisfactory, and also abundantly illustrated, is the first volume of the new *Guides Michelin,* dealing with the battle of L'Ourcq. Maps and many half-tones supplement the text, which in briefest form tells of the battle and describes the monuments of the much-tried city.

Dating from the beginning of the thirteenth century, and completed in the sixteenth, the cathedral of Meaux, which in the last three years has taken on new memories of sadness and of triumph, supplies a chapter to the *Histoire de Meaux et du pays meldois* by A. Carro (1865). A more ambitious account, dealing exclusively with the cathedral, is the *Notice historique et descriptive sur la Cathédrale de Meaux,* by Mgr. Allou, then bishop of Meaux, of which the second edition appeared in 1871. A review of the cathedral appeared in the first number for 1899 of the *Bulletin de la Conference d'histoire et d'archéologie du Diocèse de Meaux,* and another general survey, by Emile Lambin, in the *Revue de l'art chrétien* for January, 1900.

Nancy, like Meaux, is copiously represented more by references in general publications than by separate books. M. René Mercier has published *Nancy Sauvée,* describing the pre-war period in the city and bringing the story, with freedom from the German peril, down to September 13, 1914. As, however, Nancy has been subjected to aerial bombardments almost to the present day, there is still much to be written as to events there. M. Mercier is the editor of *L'Est Républicain,* a newspaper published at Nancy. He was so unfortunate as to bring his wife and family from safety in England to Nancy at the very beginning of the war, a circumstance, with the difficulties of getting out his newspaper under fire, that gave him infinite concern later on. The cathedral of Nancy dates from the eighteenth century, and is by no means the most interesting building of that charming city. It is the subject of a superb *Monographie de la Cathédrale de Nancy* by Ed. Auguin (1882). An accessible and brief account is supplied by *La Cathédrale de Nancy: Notice descrip-*

tive et artistique by the Abbé Guillaume (1870).

Although Noyon has been evacuated by the Germans for some time, little has yet been published concerning it. L. de Brunier contributed two articles of reminiscences of the occupation to the *Revue de Paris* in the issues for July, 1917, and the Comte de Caix de St. Aymar has prepared a book *Autour de Noyon sur les traces des Barbares.* It covers the whole of the surrounding territory, and is one of the most stirring stories of German barbarism yet printed. The territory has since been overrun by the Germans for a second time; perhaps a new series of horrors are to be looked for.

No student of French architecture needs to be reminded of the value and interest of the cathedral of Noyon. The *Monographie de l'église Notre Dame de Noyon* (1845), by L. Vitet, with its atlas of mammoth plates, has long been a classic. The book by Alphonse Dantier, *Description monumentale et historique de l'église Notre Dame de Noyon* (1845), is less pretentious. One or two other minor and early works have also dealt with the cathedral; but it was not until more than fifty years after the appearance of Vitet's great book that the cathedral received adequate modern treatment. This was given it by Eugene Lefèvre-Pontalis in his *Histoire de la Cathédrale de Noyon* (1900). There is no more competent architectural historian in France than this distinguished director of the Société Française d'Archéologie, and his book, although published without illustrations, is a thoroughly satisfactory account of the cathedral.

St. Dié, that remote French city with its double cathedral, still awaits the historian of events during the war. The meagre references that have been made to it may be found in general books like Gerald Campbell's *Verdun to the Vosges;* E. A. Powell's *Vive la France!;* Eugene Griselle's *Le Martyre du Clergé français;* Maurice Barrès's *Pages choisies,* and Arnold J. Toynbee's *The German Terror in France.* The most extended account of the ravages of the Germans at St. Dié is contained in *Les Barbares à la Trouée des Vosges* by Louis Colin.

The cathedral group of St. Dié is unique, consisting of the cathedral, the former collegiate church of St. Maurice et S. Dié, and the older smaller church of Notre Dame, with a connecting cloister. The best, as well as the latest, account of these churches is supplied by Georges Durand in his *Eglises romanes des Vosges* (1913).

Senlis, that delightful little city, whose martyrdom so outraged France, and the assassination of whose mayor in the early days of the war horrified civilization, looms large in the great tragedy. The story of the dreadful doings at this peaceful place have been told more than once. They are summarized by L. Fautrat in his *Senlis,* and by Loup Bertroz in *Senlis pendant l'invasion allemande. Le Drame de Senlis,* by the Baron André de Maricourt, is a daily diary of life at Senlis from August to December, 1914; and in addition to the author's own impressions, reproduces many documents and accounts of eyewitnesses of German horrors. The same author reviews the critical days from September 2 to 9, 1914, in *Les Champs de Bataille, 1914-1915: Les Cités Meurtries: Senlis.* Another diary, by Henri de Noussanne, *La Guerre dans l'Ile-de-France: Journal d'un Bourgeois de Senlis,* is a further record of personal experiences during days of deepest darkness. Chapters on Senlis and on St. Dié are included in *Prouesses allemandes* by Arthur Cluquet.

La Ville au bois dormant, by Georges Audiger, is a book of poems, about half of which are grouped under the subtitle *Les Pierres de Senlis.*

A very complete summary of the art treasures of Senlis, with numerous illustrations, is supplied by the *Guide Michelin. I. L'Ourcq,* which also summarizes the events of the German occupation. *Le Brûlement de Senlis,* by Jacques Bonzon, is an eloquent address before the War Council of Paris.

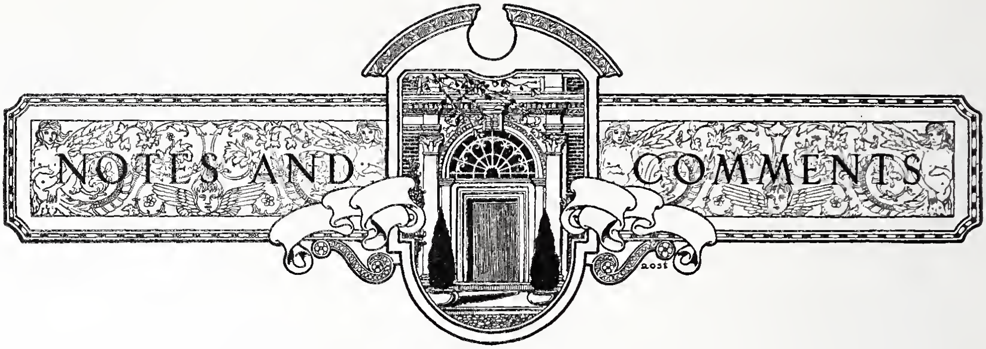
Notwithstanding the human horrors carried out by the Germans at Senlis, its beautiful little cathedral escaped without serious damage, although injured in more than one spot. It is the subject of several books. *Senlis: Monographie-Guide* by Ernest Dupuis (1900) is a brief guide to the city; *Senlis* by Marcel Aubert constitutes one of the volumes of the *Petites Monographies des Grand Edifices de la France.* It is, in a measure, a condensation of the same author's *Monographie de la Cathédrale de Senlis* (1910), in which the history and description of the cathedral are admirably presented with great fullness.

Soissons has been so long under the fire of the German guns that it is a matter of amazement that anything should be left of the cathedral or, indeed, of the city. As a matter of fact the cathedral has been seriously injured, so seriously that the harm done to it ranks closely after the destruction wrought at Reims. It forms the subject of a notable chapter in M. Emile Mâle's fine book *L'Art allemand et l'art français du Moyen Age.* This chapter, while noting the earlier destructiveness, was written in March, 1915, and takes no note of later disasters. The cathedral and other architectural monuments of Soissons are very adequately treated in the Reims *Guide* by E. Lefèvre-Pontalis.

Soissons avant la Guerre, by Etienne Moreau-Nélaton, is a useful summary of the artistic resources of the city.

This rapid review of some of the more recent French books on the cathedral cities of France shows very clearly that the architectural survey of the results of the German horror has yet to be prepared. It shows also how very widely diffused must be any future collection of books on the cathedral. Books of no architectural interest whatever must now take their permanent place in such collections. For, notwithstanding the later religious vicissitudes of the French Republic, the cathedral, in nearly all French cities, is their most important architectural monument. Injury to the cathedral affects the civic life as few other injuries do. The city and its cathedral are nearly identical in the popular mind, and what affects the one affects the other. Hence the battles around the cathedrals are personified in the churches themselves.

It is dreadful to think this should be so; and it is dreadful to realize, as one must, that for all future time the horrors of the Great War must be recalled and reviewed in any study of French buildings. Yet such is the result of Kultur as practised by its modern exponents.



NOTES AND COMMENTS

Peter Harrison, a Pioneer American Architect.

Like many another character in the history of the fine arts, Peter Harrison has been favored with various and varied chapters of life which did not form part of his own. He has been made out a pupil of Sir John Vanbrugh; in fact, he has been set down as one of Vanbrugh's assistants in the building of Blenheim Castle for the Duke of Marlborough. In like manner he has been considered a companion of Bishop Berkeley on his journey to Rhode Island in 1728. It so happens, however, that we have the humble element of actual fact to show that Peter Harrison first saw the light of day when the cornice of Blenheim Castle was being set, which would make Harrison a mature architect of ten at the time of Vanbrugh's death. Berkeley's voyage to America took place only two years later.

It is sometimes a very salutary thing for Herodotus and his ilk to make careless statements, for the keen-sighted reader is prompted by such means alone, it seems, to seek out the real facts. The effort at refutation brings on an access of archeological energy, which has made out of many a mere student a real scholar. So in the case of Peter Harrison, the original misstatements, which had been quoted and requoted in a round dozen of our most respected historical and other journals of accepted standing, inspired a member of the Massachusetts Historical Society—Mr. Charles Henry Hart—to make a painstaking search of existing documents in order to establish the facts as to that pioneer architect's life and practice. This investigator was able to discover in past records of proceedings in English courts that Peter Harrison came to America in 1745, during which year his brother Joseph was Comptroller of the Customs at Boston. He also offers the information briefly noted below, only a small part of which has been hitherto generally known to us:

Peter Harrison, architect, was born June 14, 1716, and was the son of Thomas Harrison, Jr., and Elizabeth Denison Harrison, of York, England. What education as an architect and engineer he had in England we do not know, but the earliest mention that we have found of him and of his brother, Joseph Harrison, in America is in the year 1745, when on April 3 Joseph Harrison, of Newport, was admitted a freeman of the Colony of Rhode Island. On September 28 of this same year the Assembly "Voted and resolved that his Honor the Governor be requested to send for Messrs. Joseph Harrison and Peter Harrison, who have presented this Assembly with a handsome draught of Fort George and the harbor of Newport, very ingeniously drawn, and give them the thanks of this Assembly." A month later—October 27—the Assembly "Voted and resolved that the committee that was appointed to procure a plan of Fort George and the harbor of Newport procure another draught or plan of said harbor, exactly as the same now are, and present the same to his Honor the Governor, to be signed by him and the Surveyor, to be sent home . . . and that the said committee procure a piece of plate to the value of £75 and present the same to Mr. Peter Harrison for his trouble in surveying and making a draught of said fort and harbor." This was a naïve kind of recognition that would not come amiss in many a modern instance, but communities have not seen fit to continue this graceful form of tribute to those that render them safer or more attractive.

Peter Harrison is known to have been married on June 6, 1746, to Elizabeth Pelham, a great-granddaughter of Benedict Arnold, the first governor of Rhode Island. The old Harrison house still stands on the ground of the original Harrison Farm, by which name the property Peter Harrison received through his wife came to be known.

In 1746 we find another minute of the Assembly, authorizing the improvement of the fortifications of the town. The committee placed in charge of this work again includes Peter Harrison and his brother Joseph.

Here we come to a queer bit of confusion of a kind which seems to be quite the logical thing to expect in old documents, and which no doubt will be discovered in our own legal instruments of today if our descendants should ever find them worthy of close scrutiny. We have a "Contract—Erection of Library Building"—dated August 9, 1748, and concerning the Redwood Library, which states that a new structure to house books given by Abraham Redwood is to be erected on land given by Henry Collins according "to a plan or draught drawn by Mr. Joseph Harrison." Six months later another paper, "Articles for Building the Library," which concerns additions to the original contract, stipulates that the changes are to be made according "to a plan or draught drawn by Mr. Peter Harrison." Was this a slip of the pen, due to some psychologic association on the part of the scribe, as Mr. Hart believes, or was Joseph the more important brother politically and had his name appeared so much more often that the scribe automatically wrote it in, thinking he had written Peter? Granted that architects are chiefly known by their works, it may be assumed that Peter Harrison was content to sing small and let his brother carry the burden of praise. Then, of course, there is the other possibility that Peter may have been commissioned for the alterations or additions, which in this case is tantamount to saying that he was to do the whole. In view of the fact that the articles were later legally incorporated in the original contract it would seem that both men might have been concerned in the task. Mr. Hart gives us no further light as to this aspect of the difficulty.

The Redwood Library building was opened in 1750, a monument to the Classic Revival and an enviable example of careful study on the part of its designer. We have come to feel since Mr. Kimball's monumental study of that gentleman architect, Thomas Jefferson, that the best classical influences in this country at that time radiated from his severe personality. However, Harrison would seem to have compassed the classic with a like diligence, though no doubt with less financial freedom. At any rate his conviction of the interpretative value of classic building forms was as firmly fixed as Jefferson's.

During the erection of the library he was invited to make plans for the rebuilding of King's Chapel, Boston, which plans he submitted in about five months' time. These were found acceptable, and the time required to prepare them offers an interesting comparison with methods of today. At Newport Peter Harrison also designed the Brick Market House, built in 1761. This later became the City Hall; still later again to be used for commercial purposes. The Jews' Synagogue, dedicated in 176 still stands intact. In 1761 he also completed Christ Church, Cambridge.

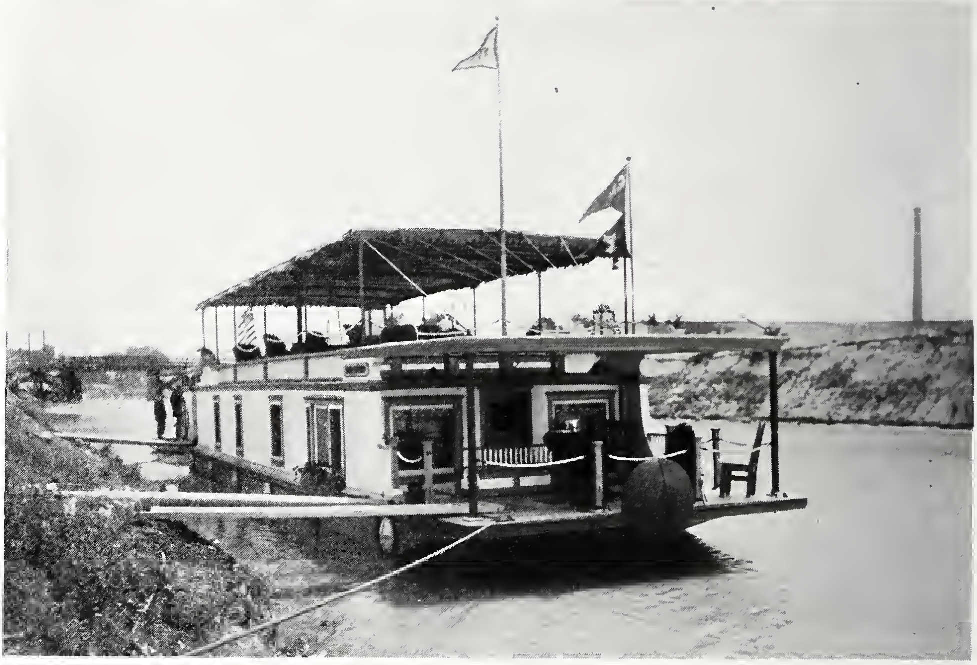
In 1768 both Joseph and Peter Harrison migrated to New Haven, where the latter became Collector of the Customs. Peter Harrison died on April 30, 1775. Mr. Hart regards him as the first professional architect in America. As to this there may be some doubt if for no other reason than that we would have first to determine the professional character of architectural services generally at that time. The truly professional nature of architectural services as we understand them is a fairly recent matter. It is interesting to note that Peter Harrison's architectural work was not so pressing but that he could also function as a dealer in molasses, mahogany, wines and rum.

RICHARD F. BACH.

The Evolution of a Bungalow.

A few years ago Edwin F. Brown, a Chicago banker, set about the task of designing for himself a houseboat. As the plans of his boat developed he worked out many novel features to be included in its construction. The real inspiration, however, came one day when Mr. Brown was taking a spin along the shore of Lake Michigan in his high-powered motor car. He was just as fond of motoring as he was of houseboating, and it seemed a pity that the pleasures of the two recreations could not be combined. Then the thought occurred to him that he might make a place on his boat for the car.

Mr. Brown admitted to himself that the scheme was a likely one—but couldn't it be improved upon? Certainly. He would make the motor car earn its passage by furnishing the power to propel the boat. And so was born this unique combination



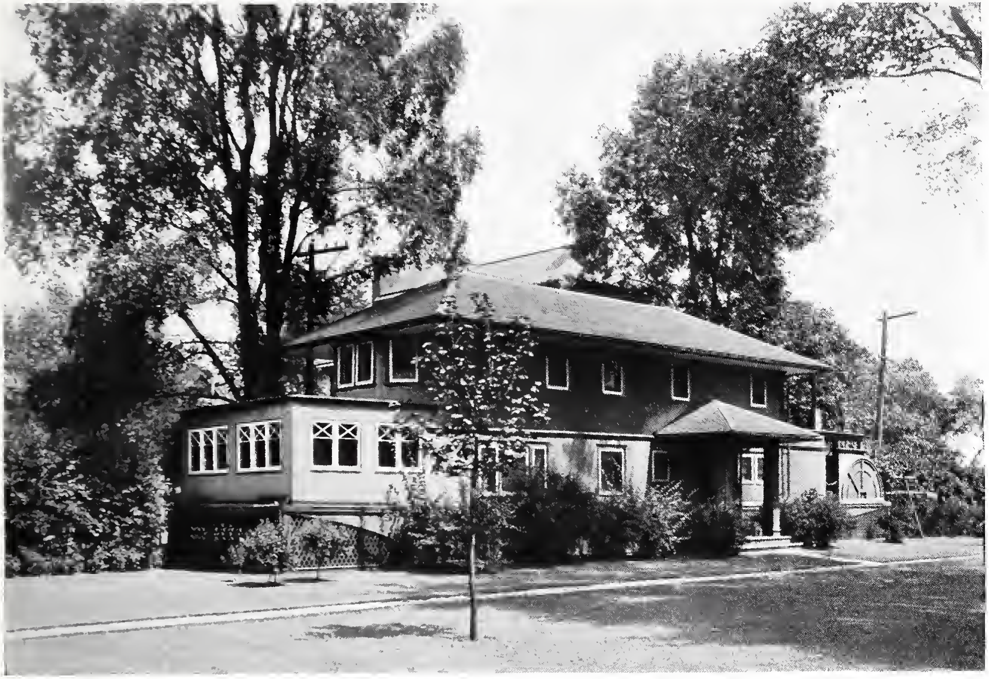
THE "DRIFTWOOD" MOORED ON A CANAL. THE GANGPLANK AT THE REAR WAS THE ONE OVER WHICH THE AUTOMOBILE WAS DRIVEN ON AND OFF THE BOAT.

of land vehicle and water craft; a web-footed roadster or a pneumatic-tired river packet, whichever one preferred to call it. Mr. Brown himself called it simply "Driftwood," for that was the name he gave his boat.

A few months later residents along the north shore of Lake Michigan in the vicinity of Chicago were startled by the appearance of a palatial houseboat which moved up and down the lake at a speed entirely inconsistent with all traditions for this particular kind of vessel. There was not a sign of smoke nor any sound which indicated the presence of an engine aboard, and yet the two paddlewheels on the sides of the boat were churning up the water as the craft proceeded on its course. The mystery remained unsolved until, a little later, Mr. Brown ran his boat to shore, when it was seen that on the aft deck, between the paddlewheels, reposed an automobile and that the engine of the car was chugging merrily away.

The mechanical arrangements by which Mr. Brown transformed his automobile in less than ten minutes into a marine engine were simple enough. He first ran the car aboard the boat over a gangplank which connected with the lone overhanging aft deck. It was then guided along a couple of grooved runways, running from end to end of the deck, and brought to a stop between the two eight-foot paddlewheels. The rear axle of the car was then jacked up so as to lift the tires clear of the deck, and finally connection was made by means of link-chain belts between spurred sprocket wheels attached to the rear hubs of the car and similar but larger sprocket wheels which were keyed to the ends of the paddlewheel shafts.

The paddlewheels were constructed so as to be independent of each other. When connected with the automobile the emergency brake of the car was disconnected from one driving wheel and the foot brake from the other. By this ingenious device one of the paddlewheels could be revolved while its opposite remained stationary, or both could be turned at the same time. This arrangement made it possible to steer the boat without recourse to the rudders—of which there were two, each six feet long and two and a half feet wide—since if the port paddle was revolved while the starboard was held still, the bow of the houseboat was shoved around to starboard, and vice versa. In addition to its two rudders the boat also had a couple of drift-



THE BUNGALOW AT EVANSTON, ILL. THE FORWARD DECK OF THE HOUSEBOAT WAS CONVERTED INTO A SUN ROOM AND THE ROOF GARDEN INTO A SECOND STORY.

boards, each ten feet long and three feet wide, to counteract the tendency of a flat-bottomed boat to drift sidewise.

Not only was the "Driftwood" remarkable in its mechanical arrangements, but as an example of marine architecture, both inside and out, it was unsurpassed. There was practically every convenience that is afforded by a modern steam-heated, six-room apartment. All of the rooms were equipped with radiators, placed in out-of-the-way spots, the heating plant being located in the kitchen. This plant also supplied hot water for the bathroom, which was a model of its kind, with porcelain tub, tile floor, nickel trimmings and shower bath. The boat carried a gas-making machine, which supplied gas for illumination and cooking, and a water filtering system which could completely clarify the water of the muddiest stream, making it suitable for lavatory and kitchen purposes, while a water-still rendered it drinkable.

The kitchen had a back porch, where were found a refrigerator, a laundry, clothes dryer and other conveniences. Next to the bathroom were four sleeping rooms, all of a good size, and then came a large combined living and dining room, while the spacious forward deck was fitted up in the style of a screened summer porch. The entire top of the house proper, which was fifty feet long and sixteen feet wide, was converted into a roof garden, with swinging seats, chairs, tables and potted plants. The roof garden was covered by an awning, which could be folded flat to permit the boat to pass under low bridges.

The "Driftwood" measured seventy-five feet over all, with a width of sixteen feet five inches. Its owner made an exhaustive examination of the size of canal locks all over the United States before deciding upon these dimensions, as he wanted a boat which would pass through any canal in the country. The entire weight of the boat was thirty-six tons, and it drew sixteen inches of water. The hull was constructed of tank pine and Oregon fir, and a novel system of ventilation which kept a current of air constantly passing through it prevented even a suspicion of dampness.

To conform with the name of the boat, "Driftwood," a scheme of color decoration, including French grays, water green and river browns, was adopted and used in connection with the wall tints, the window glass, gas fixtures, rugs, curtains, hangings and furniture.

The owner of the "Driftwood" put his scheme, and incidentally the practicability of the houseboat for living purposes, to a thorough test. Day after day, throughout the summer and fall, he and his family cruised over lakes and streams and through canals, stopping wherever the banks looked attractive. Many a time they moored at a convenient spot, ran the car ashore and toured the environs, feeling like discoverers. Occasionally they spent several days in one place. When they tired of automobiling they returned "home" and continued their water journey.

Then came a day when Mr. Brown's daughter was to be married, and the houseboat, having cost something over $25,000, together with its furnishings, seemed an acceptable wedding gift, as well as a delightful place on which the young couple might spend their honeymoon trip. So satisfactory, indeed, did this arrangement turn out, that Mr. Brown's daughter decided she would like to spend the entire winter on the "Driftwood." Accordingly the boat was pulled on the lawn of the Brown home, and after all necessary light and other service connections had been made, it proved, even in the severest weather, just as comfortable and convenient as any of the neighboring residences.

Finally there came a time when it was decided that the "Driftwood's" days as a water craft were ended and that it should be turned into a regular and permanent bungalow of concrete. This bungalow still retains all the outlines of the original craft, even to the paddlewheel boxes at the rear and the curves of the prow and stern, the only substantial changes being the transformation of the forward deck into a sun parlor and the roof garden into a second story, and the addition of an entrance porch. The result is a structure which is at once convenient and artistic, and one whose counterpart probably does not exist.

ROBERT H. MOULTON.

Influence of the Masonic Temple in Brooklyn on Later Temple Architecture.

The other day, having occasion to refer to the office file of periodicals, I came upon the Brickbuilder for December, 1916, containing an interesting and well illustrated article on the subject of Masonic Temples. The author characterizes the Masonic Temple in Brooklyn as "undoubtedly one of the most successful, from an architectural as well as from the Masonic utilitarian viewpoint." He goes on to say: "This building has been published so frequently that we will not again reproduce it; but the typical lodge plan is here repeated and needs only a glance to see its beauty. Simple in arrangement, with proportions carefully studied, it is without question one of the very best illustrations of the ideal Masonic Temple lodge plan." It is interesting to note the great influence which the design of the Masonic Temple in Brooklyn has had on the designs of succeeding Masonic Temples. This building, with the Masonic Temple in Washington, which was in some ways its prototype, set a new standard of design, and the influence of its architecture is clearly seen in the Masonic Temples at Indianapolis, Atlanta, St. Paul, Mr. Shea's Masonic Temple in San Francisco, and last but not least Mr. Knowles's very beautiful design for the Masonic Temple at Toronto, Ontario. Some others, while not so reminiscent, give evidence that the Brooklyn building, or a cut of it, was fresh in the memory of their designers. The Brooklyn Masonic Temple is a most successful essay in polychromatic architecture, and consequently extends its influence into that almost virgin field as well as into that of the typical building for the Free and Accepted Masons.

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